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PROCEEDINGS  
OF THE  
CONNECTICUT  
STATE MEDICAL SOCIETY  
1916

124th ANNUAL CONVENTION

HELD AT

BRIDGEPORT, MAY 17th and 18th, 1916

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*EDITOR*

MARVIN McR. SCARBROUGH

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*PUBLISHED BY THE SOCIETY*

The Connecticut State Medical Society does not hold itself responsible for the opinions contained in any article unless such opinions are indorsed by special vote. All communications intended for the Connecticut State Medical Society should be addressed to M. McR. Scarbrough, M.D., 105 College Street, New Haven, Conn.

The next annual meeting of the Connecticut State Medical Society will be held in New Haven, May 23d and 24th, 1917.

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## OFFICERS OF THE SOCIETY.

1916-1917

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### *President.*

SAMUEL M. GARLICK, M.D., Bridgeport.

### *Vice-Presidents.*

GEORGE M. BURROUGHS, M.D., Danielson.

JOHN C. KENDALL, M.D., Norfolk.

### *Secretary.*

MARVIN McR. SCARBROUGH, M.D., New Haven.

### *Treasurer.*

PHINEAS H. INGALLS, M.D., Hartford.

# COMMITTEES.

1916-1917.

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## STANDING COMMITTEES.

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### COMMITTEE ON SCIENTIFIC WORK.

Wilder Tileston. Ernest A. Wells.  
The Secretary.

### COMMITTEE ON MEDICAL EXAMINATIONS AND MEDICAL EDUCATION.

John B. McCook. Fritz C. Hyde.  
J. Francis Calef. Charles A. Tuttle.  
John C. Rowley.

### COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

E. J. McKnight, *Chairman*. George M. Burroughs.  
C. J. Foote. Ralph S. Goodwin.  
C. C. Gildersleeve. Frank K. Hallock.  
W. H. Donaldson. Eli P. Flint.  
Paul Waterman, *Assistant to Chairman*.  
The President. The Secretary.

### COMMITTEE ON HONORARY MEMBERS AND DEGREES.

William H. Carmalt. S. B. Overlock.  
Max Mailhouse.

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## SPECIAL COMMITTEES.

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### COMMITTEE ON A SANATORIUM FOR THE NERVOUS POOR.

Frank K. Hallock, *Chairman*. George Blumer.  
John L. Buel. Frederick T. Simpson.  
Charles D. Alton.

### COMMITTEE ON A STATE FARM FOR INEBRIATES.

Frank H. Barnes, *Chairman*. Charles J. Bartlett.  
Robert L. Rowley. Arthur B. Coleburn.  
Fritz C. Hyde.

COMMITTEE ON THE MEDICAL INSPECTION OF SCHOOLS.

Edward W. Goodenough, *Chairman*. Thomas G. Sloan.  
Charles P. Botsford. J. J. Cohane.  
Dorland Smith.

COMMITTEE ON NATIONAL LEGISLATION.

D. Chester Brown.

COMMITTEE ON PUBLIC HEALTH EDUCATION.

Kate C. Mead, <i>Chairman</i> .	William G. Coggsell.
Maude W. Taylor.	George M. Burroughs.
Harold S. Arnold.	Thomas F. Rockwell.
John G. Stanton.	Francis S. Skiff.
Florence A. Sherman.	Jessie W. Fisher.

COMMITTEE ON MEDICAL DEFENSE.

William R. Miller, *Chairman*.  
Everett J. McKnight. Frank H. Wheeler.

COMMITTEE ON HOSPITALS.

Philip W. Bill.  
Charles A. Tuttle. Fritz C. Hyde.

COMMITTEE ON REGISTRATION.

William H. Carmalt.	Laura H. Hills.
Albert R. Keith.	C. H. Turkington.
Willis E. Hartshorn.	J. H. Kingman.
L. F. LaPierre.	Eli P. Flint.
Eli B. Ives.	

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DELEGATES.

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION.

Everett J. McKnight. D. Chester Brown.

DELEGATES TO STATE ASSOCIATIONS.

MAINE.

J. M. Keniston, Middletown. Henry W. Ring, New Haven.

NEW HAMPSHIRE.

S. M. Garlick, Bridgeport. C. C. Gildersleeve, Norwich.

VERMONT.

C. J. Bartlett, New Haven. John B. Waters, Hartford.

## MASSACHUSETTS.

George Blumer, New Haven.      Francis S. Skiff, Falls Village.

## RHODE ISLAND.

P. J. Cassidy, Norwich.      C. M. Burroughs, Danielson.

## NEW YORK.

Samuel Pierson, Stamford.      Frank T. Brooks, Greenwich.

## NEW JERSEY.

Stephen J. Maher, New Haven.      Hugh B. Campbell, Norwich.

## PENNSYLVANIA.

Everett J. McKnight, Hartford.      W. H. Carmalt, New Haven.

# HOUSE OF DELEGATES.

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## COUNCILORS.

---

HARTFORD COUNTY.  
WALTER R. STEINER.

NEW HAVEN COUNTY.  
WILLIAM H. CARMALT (reëlected).

NEW LONDON COUNTY.  
PATRICK J. CASSIDY.

FAIRFIELD COUNTY.  
FRANK W. STEVENS.

WINDHAM COUNTY.  
SELDOM B. OVERLOCK.

LITCHFIELD COUNTY.  
ELIAS PRATT (reëlected).

MIDDLESEX COUNTY.  
GEORGE N. LAWSON.

TOLLAND COUNTY.  
THOMAS F. ROCKWELL (reëlected).

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## DELEGATES.

---

HARTFORD COUNTY.

Charles C. Beach.	Charles E. Taft.
Arthur C. Heublein.	William S. Kingsbury.
Harry Sharpe.	H. S. Brooks.
Everett J. McKnight.	

## PROCEEDINGS.

## NEW HAVEN COUNTY.

Willis E. Hartshorn.	Frank W. Wright.
Frank H. Wheeler.	Alfred G. Nadler.
Charles W. Comfort.	Edward W. Goodenough.
Walter L. Barber.	Willis H. Crowe.
Frank N. Loomis.	

## NEW LONDON COUNTY.

George H. Jennings.	John G. Stanton.
---------------------	------------------

## FAIRFIELD COUNTY.

Frank H. Coops.	Frank H. Barnes.
George H. Noxon.	William S. Randall.
Jacob R. Topping.	Francis I. Nettleton.

## WINDHAM COUNTY.

Robert C. Paine.	George M. Burroughs.
------------------	----------------------

## LITCHFIELD COUNTY.

Robert Hazen.	Frank H. Lee.
---------------	---------------

## MIDDLESEX COUNTY.

Arthur B. Coleburn.	John E. Loveland.
---------------------	-------------------

## TOLLAND COUNTY.

Donald L. Ross.

## STANDING COMMITTEES.

1915-1916.

## COMMITTEE ON SCIENTIFIC WORK.

Frank W. Stevens.	Wilder Tileston.
The Secretary.	

## COMMITTEE ON MEDICAL EXAMINATIONS AND MEDICAL EDUCATION.

Samuel M. Garlick.	J. Francis Calef.
John B. McCook.	Fritz C. Hyde.
Charles A. Tuttle.	

## COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

E. J. McKnight, <i>Chairman</i> .	George M. Burroughs.
C. J. Foote.	Ralph S. Goodwin.
Rush W. Kimball.	Frank K. Hallock.
W. H. Donaldson.	Eli P. Flint.
The President.	The Secretary.

COMMITTEE ON HONORARY MEMBERS AND DEGREES.

W. H. Carmalt.

D. Chester Brown.

S. B. Overlock.

COMMITTEE ON ARRANGEMENTS.

Frank M. Tukey.

R. A. Lockhart.

Henry B. Lambert.

SPECIAL COMMITTEES.

1915-1916.

COMMITTEE ON A SANATORIUM FOR THE NERVOUS POOR.

Rienzi Robinson.

John L. Buel.

Frank K. Hallock.

George Blumer.

Frederick T. Simpson.

COMMITTEE ON A STATE FARM FOR INEBRIATES.

Frank H. Barnes.

Charles J. Bartlett.

Robert L. Rowley.

Daniel C. Patterson.

Arthur B. Coleburn.

COMMITTEE ON THE MEDICAL INSPECTION OF SCHOOLS.

Edward W. Goodenough.

Thomas G. Sloan.

Charles P. Botsford.

Joseph H. Townsend.

William B. Cogswell.

COMMITTEE ON NATIONAL LEGISLATION.

Everett J. McKnight.

COMMITTEE ON PUBLIC HEALTH EDUCATION.

*Chairman*, Kate C. Mead.

Maude W. Taylor.

Stuart J. Lawson.

E. R. Kelsey.

Harold S. Arnold.

Florence A. Sherman.

Thomas F. Rockwell.

Marguerite Bullard.

George H. Warner.

COMMITTEE ON MEDICAL DEFENSE.

William R. Miller.

Frank H. Wheeler.

Everett J. McKnight.

COMMITTEE ON HOSPITALS.

George Blumer.

Charles A. Tuttle.

Walter R. Steiner.

COMMITTEE ON REGISTRATION.

William H. Carmalt, *Chairman*.

Secretaries of County Medical Societies.

## MINUTES OF THE HOUSE OF DELEGATES.

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The first meeting of the House of Delegates was held at the Stratfield Hotel, 1243 Main Street, Bridgeport, on Wednesday, May 17, 1916, at 10.18 A. M. The President, Dr. Max Mailhouse of New Haven, was in the chair. The following were present: (Councilors) Dr. Walter R. Steiner, Hartford County; Dr. William H. Carmalt, New Haven County; Dr. Patrick J. Cassidy, New London County, and Dr. William H. Donaldson, *pro tem.*, Fairfield County; Dr. George N. Lawson, Middlesex County, and Dr. Thomas F. Rockwell, Tolland County; (Delegates) Hartford County, Dr. Everett J. McKnight, Dr. Arthur C. Heublein, and Dr. William S. Kingsbury; New Haven County, Dr. Willis E. Hartshorn, Dr. Frank H. Wheeler, Dr. Charles W. Comfort, Dr. Walter L. Barber, Dr. Frank W. Wright, Dr. Willis H. Crowe, Dr. Frank N. Loomis; New London County, Dr. John G. Stanton; Fairfield County, Dr. F. H. Coops, Dr. George E. Noxon, Dr. J. R. Topping, Dr. Frank H. Barnes, Dr. F. I. Nettleton, Dr. W. S. Randall; Windham County, Dr. George M. Burroughs; Litchfield County, Dr. Frank H. Lee; Middlesex County, Dr. Arthur B. Coleburn, Dr. John E. Loveland; and the Secretary, Dr. Marvin McR. Scarbrough. The following reports were then read, accepted and ordered placed on file:

(1) Report of the President, Dr. Max Mailhouse (New Haven):

### *Members of the House of Delegates:*

In presenting to you an account of my stewardship of the Society for the past year I will have to refer to matters of national as well as local interest.

The incident which affected us most profoundly at home was the untimely death on January 7 of our Treasurer, Dr. Joseph H. Townsend. It is but fitting that the President of the Society

of which he was such a prominent member should at least pay tribute to his sterling worth, his modest and gentlemanly qualities, his uniform courtesy and his faithful attention to whatever duties were placed and demands made upon him.

In the interim, the duties of the office have been acceptably performed by Dr. Phineas H. Ingalls, who was appointed by the Council in January.

Other vacancies caused by this loss have been filled as our laws provide: that of Chairman of the Committee on Public Health Education by the appointment of Dr. Kate C. Mead of Middletown, and that of membership on the Committee on Medical Inspection of Schools by the appointment of Dr. Jeremiah J. Cohane of New Haven. Dr. Frank K. Hallock of Cromwell has been placed upon the Committee on Sanatorium for the Nervous Poor, vice Dr. C. A. McKendree who resigned and has left the State.

At the last meeting a committee on Medical Registration was appointed and your President has selected Dr. William R. Carmalt of New Haven for the chairmanship of that Committee, vice Dr. Joseph H. Townsend, deceased.

In response to a request from the secretary of the conference that a representative be sent to the 12th Annual Conference on Medical Education, Public Health and Legislation, to have been held at Chicago on February 7 and 8 of this year, I appointed Dr. E. J. McKnight of Hartford, by whom a report will doubtless be made at this session.

It is scarcely necessary to call your attention to the fact that we have to select two representatives to the House of Delegates of the American Medical Association which meets at Detroit on Monday, June 12; my attention was recently formally called to the matter by a letter from its secretary.

In my official capacity I have visited the various county society meetings and have to report an active interest throughout the State in all matters pertaining to the State Society as well as to the National organization. Harmony and good fellowship prevail and the scientific spirit as evidenced by the papers and discussions is second to no state in the Union. The members of

the New London County Association gave expression to their interest in the promotion of the work of their member of our Committee on Public Policy and Legislation by appointing an Auxiliary Committee of two. It seems to me that this example might be followed in other counties with relief to the individual and profit to all.

In looking over the copies of our proceedings for the past few years, I note (in the report of the Committee on Medical Examination and Education) the taking up of some six or seven pages of space, by rules for examination and by examination questions. It seems to me that these questions having now been printed some twenty-two years, it should no longer be necessary to litter up our proceedings with this matter with every edition; candidates for examination can get a very good idea of the general character of the questions asked, by a perusal of sets of questions issued every two or three years by the Committee itself.

Recently, the American Medical Association, of which we are an integral part, has lost its foremost member, Dr. William Louis Rodman, who had been elected its president in 1915 and who died on March 8 of this year. It is proper that I refer to this sad event, for the lowered resistance to the fatal disease, pneumonia, which ended his career, was intensified by his strenuous activities, both as practitioner and as President of the Association. It was in January of this year that he called to Washington the presidents of the various State Medical Societies to meet with the President of the United States and the House Committee on Military Affairs in order to urge that, in the reorganization of the army, adequate provision be made for an increased proportion of medical officers. As your President, I attended this conference, which met in Washington on January 24, where representatives of twelve states gathered and drew up a statement in support of the movement. A sub-committee was appointed to personally appear before the House Committee, which was done, with the result that existing conditions will be improved upon although the increase considered by us as necessary was not granted. The Honorable John Q. Tilson, representative in Congress from this State and a member of the

Committee, expressed himself as strongly in favor of the measure and worked strenuously in its behalf.

Before setting out for the meeting, I consulted with and obtained the opinions of the Presidents and Secretaries of our County Societies and so was enabled to express the feelings of all parts of the State upon this matter.

Another matter of increasing national importance but which has become perennial with us, is contained in two communications received from the Secretary of the Council on Medical Education of the American Medical Association. The first urged upon us the desirability of securing as a minimum standard of preliminary education, two years of college work and also stated that ten states have thus far adopted it. In the other he urged upon us the necessity of securing a new practice act, providing for a single board of Medical Examiners as has been recently done in New Hampshire and which act he considers most excellent. Let us hope that the coming year may see Connecticut added to the single board list.

Finally, I have placed in the hands of the Secretary a series of communications from the Secretary of the American First Aid Conference, asking us to appoint a committee to participate in their proceedings and stating that it should consist, if possible, of a railroad surgeon, a mining surgeon, an industrial surgeon, a civil surgeon interested in First Aid, and a surgeon with experience in the present war. The Council has voted to recommend the appointment of such a committee, and will formally bring the matter before you through its chairman.

(2) Report of the Secretary, Dr. Marvin McR. Scarbrough (New Haven) :

## REPORT OF THE SECRETARY.

The minutes of the Special Meeting of the House of Delegates which was held at the Connecticut Hospital for the Insane on October 14, 1915, will appear in the 1916 Proceedings of the Society. The Committee on Publication reported unfavorably

on the proposition of the Boston Medical and Surgical Journal for the publication of the Proceedings of the Society. The attendance of Delegates at the Special Meeting was the best within the memory of the Secretary. Of the thirty-one delegates, twenty-nine were present; also, all members of the Council.

The Semi-Annual Meeting was held in conjunction with the Middlesex County Society. The attendance was good but not what it should have been considering the programme, the weather, and the accessibility of the place of meeting. The Scientific programme was excellent. Papers were read by Dr. C. Floyd Haviland of Middletown, Dr. John C. Rowley of Hartford and Dr. Willis E. Hartshorn of New Haven.

If the established order is continued, the next semi-annual meeting should be held in conjunction with the Litchfield County Medical Association.

The active membership of the Society, according to the county reports, is 947 members in good standing, the greatest in the history of the Society. This does not include eight members suspended for non-payment of dues, and thirteen honorary members. With the coöperation of the official organizer of the American Medical Association, who is now working in the State, it is hoped that the membership will be raised well above the 1,000 mark.

The following is a list of thirty-nine physicians who have been admitted to membership:

Henry T. Bray, Univ. of Vermont, 1902, New Britain.  
George W. Dunn, Baltimore Medical College, 1909, New Britain.  
Peter W. Fox, Univ. of Vermont, 1901, New Britain.  
Gertrude J. Kinsella, Tufts, 1911, New Britain.  
Michael A. Kinsella, Tufts, 1912, New Britain.  
Harry L. F. Locke, Tufts, 1912, Hartford.  
Frank Zwich, Univ. of Vermont, 1913, New Britain.  
William Dwyer, Johns Hopkins, 1913, Hartford.  
Thomas H. Gallivan, Yale, 1909, Hartford.  
Joseph F. O'Brien, Univ. of Vermont, 1913, Hartford.  
Harry Stephen Reynolds, Albany Medical, 1914, Hartford.  
Donald B. Wells, Johns Hopkins, 1912, Hartford.  
Harry R. Wormley, Rush Medical, 1906, Hartford.

John F. Sagarino, P. & S., N. Y., 1913, Hartford.  
 William L. Sheahan, Jr., P. & S., Balt., 1912, New Haven.  
 William H. O'Neil, Baltimore Medical College, 1911, Ansonia.  
 Fred W. Comstock, Tufts Medical, 1913, New Haven.  
 Frederick H. Hynes, Tufts Medical, 1913, New Haven.  
 Louis H. Levy, Yale, 1911, New Haven.  
 Platt H. Rogers, Yale, 1912, West Haven.  
 J. Morris Slemons, Johns Hopkins, 1901, New Haven.  
 Arthur Morse, Johns Hopkins, 1906, New Haven.  
 Thomas H. Young, Yale, 1895, New Haven.  
 H. Walter Murless, Louisville Medical College, 1893, Guilford.  
 Ernest Segnalla, Yale, 1912, New Haven.  
 Leonard C. Whiting, Maryland Medical College, 1912, New Haven.  
 Isao Hirata, Yale, 1912, New Haven.  
 Anthony J. Mendillo, Yale, 1907, New Haven.  
 Frank C. McGuire, Yale, 1897, New Haven.  
 Raymond V. Quinlan, Baltimore Medical College, 1910, Meriden.  
 William H. Licht, Johns Hopkins, 1911, Waterbury.  
 Paul D. Hippolitus, Yale, 1912, Bridgeport.  
 Robert D. Roller, Jr., A.B., West Virginia, 1900; Univ. Col. of Med., 1905, Bridgeport.  
 C. Floyd Haviland, Syracuse Univ., 1896, Middletown.  
 Sheldon S. S. Campbell, Univ. of Vermont, 1902, Middletown.  
 Charles George Barnum, Yale, 1905, B.A.; M.A., Middleburg Col., Groton.  
 John F. Hackett, McGill, 1901, Mansfield Depot.  
 Alfred C. Henderson, B.A., Amherst, 1899; P. & S., N. Y., 1903, Stamford.  
 John L. Burnham, B.A., Yale, 1896; Yale, 1899, Middletown.

The Society has lost through death twelve members since the last report. The names follow:

Rush W. Kimball, Norwich, November 15, 1915.  
 Chauncey W. Lamb, New Haven, March 22, 1916.  
 Benjamin L. Lambert, New Haven, February 3, 1916.  
 Anthony Peck, Norwich, April 3, 1916.  
 William S. C. Perkins, Norwich, August 7, 1915.  
 Henry M. Rising, South Glastonbury, May 19, 1915.  
 Frederick A. Ruickholdt, New Haven, June 2, 1915.  
 Thomas H. Russell, New Haven, February 4, 1916.  
 Erastus P. Swasey, New Britain, November 13, 1915.  
 Joseph H. Townsend, New Haven, January 7, 1916.  
 Josiah Swett, New Hartford, January 13, 1916.  
 James D. Hayes, Torrington, June 20, 1915.

Dr. Joseph H. Townsend was finishing his eleventh year as Treasurer of the Society. Aside from his duties as Treasurer, he was a member of the Committee on Medical Inspection of Schools, Chairman of the Committee on Public Health Education, and Chairman of the Committee on Registration. Dr. Townsend was a punctual and painstaking servant of the Society, ever ready to perform unflinchingly any duties assigned to him. He made many lasting friends through his courteous and respectful manner.

Dr. Rush W. Kimball was a member of the Committee on Public Policy and Legislation, representing New London County.

A table showing the changes in the membership of the Society is appended herewith:

Total Membership	County Associations	Members in Good Standing	New Members	Reinstatements By Transfer	Deceased	Removed	Resigned	Suspended	Gain	Loss
240	Hartford County .....	239	14	0 0	3	0 0	0 1	11 0		
298	New Haven County .....	293	17	2 1	6	1 0	5 0	11 0		
63	New London County .....	63	1	0 1	3	1 1	0 0	0 2		
190	Fairfield County .....	190	3	0 0	2	0 0	0 0	1 0		
35	Windham County .....	35	0	0 0	0	0 0	0 0	0 0		
65	Litchfield County .....	65	0	0 1	2	0 0	0 0	0 1		
45	Middlesex County .....	44	3	0 0	0	2 0	1 1	1 0		
19	Tolland County .....	18	1	0 0	0	0 0	1 0	0 0		
955		947	39	2 3	16	4 1	8 8	24 3		
13	Honorary.									
968	Total.									

Respectfully submitted,

M. McR. SCARBROUGH,  
*Secretary.*

(3) Report of the Chairman of the Council, Dr. William H. Carmalt (New Haven):

## REPORT OF THE CHAIRMAN OF THE COUNCIL.

*Mr. President and Members of the House of Delegates:*

The Council has held two meetings during the year.

The legacy of the late Dr. O. C. Smith was paid in by his testator as your Treasurer's report will show and the income is now available, according to its terms, to pay the dues of such "deserving members" as may in the judgment of the Council be unable to pay themselves.

The terms of this generous bequest are sufficiently explicit to avoid confusion in its distribution. The Council may exempt from dues for various reasons, but this fund can be used for only the purpose specified. The recommendation for payment should appear on the Secretary's records as coming from a County Clerk to the Council and from that by an order to the Treasurer to pay. No reference is made in the will as to the disposition of a possible surplus of the income. It may perhaps be as well not to try to cross that stream until we come to it.

As a logical sequence to the compensation laws, now in active, and, I think generally in satisfactory operation, it is inevitable that some form of health insurance for wage-earners will be adopted at the next legislature. The subject is altogether too vast to be more than briefly referred to in this communication; besides it is down to be treated in the scientific programme by Dr. Blumer before the whole Society. It is a matter of the highest economic value to the community and affects our profession most of all. Health insurance has been enforced in Germany and in Great Britain for a number of years, long enough to have been fairly tried out.

In despotic Germany, having been ordered, it is perforce accepted without serious opposition, and, as was intended, turns out to be one of the important factors leading up to the wonderful military efficiency of that nation. In democratic England on the contrary it was, in the beginning, fought fiercely by both employer and the medical profession; the latter, feeling themselves particularly singled out for oppression, were for a time in open rebellion. As time went on, however, the community,

both lay and professional, adapted itself to its changed conditions until now it is regarded by most as a distinctly good thing. It being of course simply a demonstration of the well-known economic law that a matter which is a benefit to the community at large must in the end redound to the benefit of each component part: it could not be otherwise if we consider preventive medicine of any advantage to the profession.

A short time ago a gentleman employed by the American Medical Association to further the circulation of its Journal and at the same time to increase the membership of the Association called upon me as Chairman of the Council with a proposition to work in Connecticut on a plan which he, under the direction of the Association, had carried on with what he asserted was a great success in a number of the central western states, viz.: that he be given by each County Association one dollar for every new member acceptable and admitted to the Association, consequently to the State Society. In other words to act as agent to the County Clerk in soliciting members to join the Association. According to the Connecticut Register for 1914 there are about 500 physicians practicing in this State who are apparently eligible to the Connecticut State Medical Society who do not belong to it. It is to this class that he would apply. The matter was presented to the Council and on discussion it was found that the Northern and Eastern Counties had been fairly well canvassed by their respective Councilors and County Clerks so that there are but few acceptable who do not already belong to the Society—but that the difficulty was mainly in the three counties of Fairfield (189), New Haven (287), and Hartford (234), where there was but little or no active movement to get the new arrivals in because it was practically impossible to keep track of new members coming into the various counties. No action was taken by the Council.

In the death of its Treasurer, Dr. Joseph H. Townsend, the Society has lost a valuable officer and an esteemed fellow member; always interested in the welfare of the Society, and as Secretary of the State Board of Health doing valuable work throughout the State. Under his fostering care the influence of the public health officers had become much more efficient. The

Council appointed Dr. Phineas H. Ingalls of Hartford to fill the vacancy created by his death until this present annual meeting.

In last year's report of the Treasurer, attention was called to the irregularities in the reports of the County Clerks both as to time for making their returns to the Treasurer and the form in which their reports should be made—each interpreted the rule to his own convenience. This has been a complaint of long standing and attempts to rectify it have been made, but so far without success. The Treasurer plaintively stated in his last report "I don't know why." The matter was brought up at the last meeting of the Council with the Acting Treasurer present. So far as could be learned, the reason for failure seemed to be in a simple lack of energy to take the initiative and it was the unanimous opinion of the Council that definite rules should be made for the reports both as to time and form to which all the County Clerks should conform. To that end the Council recommends that Chapter XII, Section 10, of the By-Laws be changed to read as follows, viz.:

The fiscal year of the Society shall terminate on April 30 of each year.

On or before that date the Secretary of each component Association shall make a report to the Treasurer of the Society on a blank provided by the Treasurer for that purpose, stating 1st, the number of members from his county, and the number exempt; 2d, the total amount collected on the tax of that fiscal year; the amount collected during the year on taxes in arrears; the amount of taxes still in arrears for one year previous; the amount in arrears for two or more years previous, together with a check to cover the above mentioned collections.

The bills for the tax laid at the annual meeting shall be sent to each member by the respective county clerks on the first of June of each year.

The clerk of each component association shall forward its roster of officers and list of non-affiliated physicians to the Secretary of this Society each year twenty days before the annual session.

The Council recommends the adoption of the above changes in the By-Law. It will have to lie over until next year before adoption.

As Nominating Committee, the Council presents the following lists of officers:

*President.*

SAMUEL M. GARLICK, Bridgeport.

*Vice-Presidents.*

GEORGE M. BURROUGHS, Danielson.

JOHN C. KENDALL, Norfolk.

*Secretary.*

M. McR. SCARBROUGH, New Haven.

*Treasurer.*

PHINEAS H. INGALLS, Hartford.

*Committee on Scientific Work.*

Wilder Tileston, New Haven. Ernest A. Wells, Hartford.

*Committee on Medical Examinations and Medical Education.*

John C. Rowley, Hartford.

*Committee on Public Policy and Legislation.*

E. J. McKnight, Hartford, *Chairman.*

Charles J. Foote, New Haven County.

C. C. Gildersleeve, New London County.

W. H. Donaldson, Fairfield County.

George M. Burroughs, Windham County.

R. S. Goodwin, Litchfield County.

Frank K. Hallock, Middlesex County.

Eli P. Flint, Tolland County.

*Committee on Honorary Members and Degrees.*

Max Mailhouse.

W. H. Carmalt.

S. B. Overlock.

*Delegate to the American Medical Association.*

D. Chester Brown, Danbury.

*Delegates to the State Associations.*

*Maine*—Henry W. Ring, J. M. Keniston.

*New Hampshire*—Samuel M. Garlick, C. C. Gildersleeve.

*Vermont*—John B. Waters, C. J. Bartlett.

*Massachusetts*—George Blumer, Francis S. Skiff.

*Rhode Island*—Patrick J. Cassidy, George M. Burroughs.

*New York*—Samuel Pierson, Frank T. Brooks.

*New Jersey*—Stephen J. Maher, Hugh B. Campbell.

*Pennsylvania*—E. J. McKnight, W. H. Carmalt.

Respectfully submitted,

WILLIAM H. CARMALT,

*Chairman of Council.*

(4) Reports of the Councilors from the different County Societies of the State:

### REPORT OF THE COUNCILORS.

(a) Hartford County, by Dr. Walter R. Steiner:

*Mr. President and Gentlemen of the House of Delegates:*

The past year has been an uneventful one for the Hartford County Medical Association. The profession has had a busy winter on account of the many cases of illness; the Capitol has been quiet as the legislature has not been in session; and complete harmony has prevailed. The Hartford and St. Francis hospitals have been taxed to their utmost and are building additions for increased facilities. The New Britain Hospital has also had a prosperous year. Since the last Transactions were issued we have lost but one member by death, Dr. Erastus P. Swasey of New Britain, whose rugged honesty and sterling traits endeared him to us all. Our present membership is 239. The Hartford Medical Society has recently erected another tier

of stacks for the housing of its books, realizing the educational value such societies possess.

Respectfully submitted,

WALTER R. STEINER,  
*Councilor.*

May 15, 1916.

(b) New Haven County, by Dr. William H. Carmalt:

*Mr. President and Members of the House of Delegates:*

The membership of the New Haven County Medical Association is 306, classified as follows: honorary, 5; exempt from dues, 4; suspended, pending non-payment of dues, 9; active, 288.

Three have been dropped automatically and five have died—Dr. Arthur Ruickholdt, Dr. Joseph H. Townsend, Dr. Thomas H. Russell, Dr. Benjamin L. Lambert, Dr. Chauncey S. Lamb.

Dr. Townsend was, at the time of his death, Treasurer of this Society and Secretary of the State Board of Health. Always interested in matters relating to the advancement of our profession, his loss is felt keenly by all who knew him. His obituary notice, by his friend Dr. Gustavus Eliot, will appear in the Proceedings of this Society, and I can add little thereto. I cannot forbear, however, a personal tribute to one I have known in professional relations for thirty-two years, since he first began to study his profession in the Yale Medical School in 1884. Being graduated in due course, he then became interne in the New Haven Hospital, serving with distinction in an epidemic of smallpox which broke out while he was there. Quiet and unassuming in demeanor, he let no opportunity for good go by, and every organization he became attached to he served faithfully for its benefit. This was particularly the case in the State Board of Health where his position as Secretary and chief executive officer brought him in wide contact with public health officers throughout the State, who never sought his aid and advice in vain. He lived up to the standard that a public office is a public trust.

Thanks to the indefatigable labors of the Secretary of the Association, Dr. Hartshorn, in providing attractive programmes, our County meetings have been well attended. During this year he has turned in to the Treasurer of the Society \$1,145.20 and reports \$156 as still due from delinquent members.

In the Councilor's report of last year reference was made to the establishment in the Yale Medical School of a Professorship of Public Health and the appointment of Prof. C.-E. A. Winslow thereto. Prof. Winslow has created the most cordial relations with the medical profession; has given several lectures on different phases of public health to various organizations both in this county and throughout the State. Your Councilor can but congratulate the Society on the opportunity thus presented to stimulate a widespread interest in matters of public health welfare and to hope that our legislators will learn of the great economic value of attention thereto, now given the cold shoulder in almost every attempt by the profession to better conditions.

Respectfully submitted,

WILLIAM H. CARMALT,  
*Councilor.*

(c) New London County, by Dr. Patrick J. Cassidy:

*Mr. President and Gentlemen of the House of Delegates:*

It is rather monotonous to be able to report each year that conditions in New London County are as usual. No great changes in the number of members. The same eager anxiety of the new-comers into the professional circle to become members of the County Association, and then the mental and physical inertia that prevents attendance at the two meetings. It is a mystery, to me, why the almost frantic efforts to obtain membership in the Association is succeeded by equally sedulous efforts to absent oneself from the meetings.

During the past year, our organization had a most excellent scientific meeting, in the Fall, and at the annual meeting it was honored by the presence of Dr. Mailhouse, and the ten members present were edified by the reading of a scholarly and instructive

paper, by Dr. Ross. Average of attendance at the meetings, twelve, although several more attended the lunches. These meetings are illustrative of the apathy of our members. Each year some member scolds the Association, but all to no purpose. Yet the men of weight do attend and further the work, aiding scientifically and legislatively. So it might be said that the small attendance is rather more favorable to the advancement of our Association, than a far larger meeting would be. During the Annual meeting several questions of practices bordering upon the, or actually, unethical, were discussed freely and punitive action suggested. It is to be hoped that our linen will be spotless next May.

During the year, Death visited us thrice, taking away Rush W. Kimball, W. S. C. Perkins, and Anthony Peck, three of our most valued and influential members, earnest workers in the Vineyard. By their absence we sustain a great loss.

Respectfully submitted,

PATRICK J. CASSIDY,  
*Councilor.*

(d) Fairfield County, by Dr. W. H. Donaldson:

*Mr. President and Gentlemen of the House of Delegates:*

Another year of Fairfield's work places on the Councilor the weight of a report. It is not a grievous burden to bear, however, since the year has been one of harmonious work, humanitarian, social and scientific, all carried on with energy and foresight. The interest in our County Association has never shown better purpose or more intelligent plan than at the present time. It is an occasion of peculiar pleasure to the Councilor from Fairfield to make this report at the first Annual Meeting of this Society to Western Connecticut. We give you a cordial welcome, and we wish to make the occasion one of so much pleasure and profit that you will all want to come again. During the year since "last we met" County affairs have moved along without friction. Both the meetings have been well attended where the real activity of Fairfield revealed itself. Much of earnest scientific thought

was present, giving an impress of meetings of high character. Able men from within and from without the State brought to us their richest experience. No practitioner of medicine can afford to miss these meetings; they surely increase our knowledge of scientific and practical medicine, cultivate sociability and friendliness and promote general welfare.

At the Annual Meeting in April one general subject, "The Control of Cancer," was presented and ably discussed. By request, and as an unique suggestion by President Stevens, the members of the Association during the week of the meeting made the control of cancer a special subject of conversation and advice with patients and with others as opportunity offered. This unique method of presenting important medical subjects to the whole body of medical men and through them individually to the public appeals strongly to the writer; it seems to be a natural and persuasive way to impress those who are acutely interested and need to be intelligently informed. Literature from the American Society for Control of Cancer was supplied to the doctors for intelligent distribution.

At the Semi-Annual Meeting, which was held at the State Tuberculosis Sanatorium at Shelton, we had the pleasure of entertaining President Mailhouse. At the Annual Meeting in April a delegate from New Haven County was present. We greatly appreciate the coming of visiting delegates; such association should be more common, it cultivates friendliness and good fellowship.

At the last meeting of the Society, Fairfield County Association numbered 187 active members; during the year we have added three new members, two by initiation and one by transfer from New York County Association. Only one has been lost by death, namely, Dr. A. J. Smith of Bridgeport. Dr. Smith was one of those having longest active membership in the Association. This faithful associate has gone before. His obituary has been presented in appropriate manner. It only remains for us to say the sad, true words, "we miss him." The addition to our number is not what it ought to be. We are not yet doing our duty in this particular; some more effective or persuasive method

should be devised by which we might bring in a large number of eligible practitioners.

The general hospitals of Fairfield County are continuing their excellent work of high practical value and their capacity is over-taxed. Our associates in Norwalk are making vigorous effort to raise funds and secure site for a new building and enlarged facilities.

The State Tuberculosis Sanatorium at Shelton has been doing excellent work; greatly enlarged accommodations are urgently demanded. We regard Dr. Stockwell's removal as a distinct loss to the County as well as to the institution.

In general the narcotic law is working satisfactorily in our midst. Although so highly beneficent in its provisions, it is not to be expected that a law so intimately affecting the practice and the habits of our people can at all times be applied without occasional friction. Our members should make its application as easy as possible. It is to be feared that occasionally one has unwittingly violated some of its intricate provisions; we cannot believe that any one of us would knowingly do so.

The work of the year is closed, its record is made. If during the year there has been any bickerings or dissension it has not come to the ears of the Councilor. How much better it is that each member shall be conscious of the progress and welfare of the Association and labor to that end, willingly giving his aid and lending his energies to the common good. "Obviously, the more this is true, the greater becomes the power of our organization for doing good, both by our own advancement and in our usefulness to the public which we serve."

Again bidding you welcome to Fairfield County, this report is respectfully submitted.

W. H. DONALDSON,  
*Councilor.*

(e) Windham County, by Dr. Seldom B. Overlock:

*Mr. President and Gentlemen of the House of Delegates:*

On account of my recent illness, I am sending you a written report, which must be necessarily brief.

It is with pleasure that I report to you the prosperous condition of the Windham County Medical Society and of the large and enthusiastic gathering of its members at its Semi-Annual and Annual meetings.

At its 123d Annual Meeting, the Secretary, Dr. Laura Hills, reported a full payment of all dues, and for the first time in its history, of a goodly surplus in its treasury after all bills were paid.

We have departed somewhat from our usual reading of papers by members of the Society and have had exceedingly instructive papers from members of other County Societies, which perhaps accounts for our increased attendance.

Our Semi-Annual Meeting, held at Putnam, Conn., October 21, 1915, will always be remembered as time well spent with Dr. Wilder Tileston of New Haven and Dr. Paul Swett of Hartford, who imparted to us much of their knowledge on "Relation of the Teeth to the General Health" and "Rheumatism."

April 20, 1916, at Windham Center, Conn., was held our 123d Annual Meeting, where a large number of our members gathered to listen to instructive papers by Dr. E. J. McKnight and Dr. John C. Rowley of Hartford on "Tumors of the Breast" and "Pathology of Tumors of the Breast."

We have made an especial effort to have the delegates from other Counties with us at our Meetings, with no results except from New London County, who showed their friendly spirit by the attendance of their delegate at both the Semi-Annual and Annual Meeting.

Dr. Max Mailhouse, President of the State Society, spent the day with us at our Semi-Annual Meeting and extended to us much of his abundant good cheer.

Respectfully submitted,

SELDOM B. OVERLOCK,  
*Councilor.*

May 11, 1916.

(f) Middlesex County, by Dr. George N. Lawson:

*Mr. President and Members of the House of Delegates:*

Middlesex County has enjoyed a year of quiet progress. The members of our Society are holding fast to the *good* of the traditional past and eagerly reaching out for the *better* as it is unfolded by modern investigation.

We were glad to welcome the State Society at our Semi-Annual Meeting last October at the Connecticut Hospital for the Insane. Besides contributions from our own County, which included a paper by Dr. C. Floyd Haviland on "The Aims of a Modern State Hospital" and a symposium on mental diseases by members of the hospital staff, there were papers on "The Differential Diagnosis of Primary and Secondary Anemia," by Dr. John Carter Rowley of Hartford, and on "Traumatic Conditions Affecting the Kidneys," by Dr. Willis E. Hartshorn of New Haven. We retain pleasant memories also of the goodly luncheon and its accompanying music with which we were entertained and refreshed.

At our Spring Meeting the general subject was "Influenza," with five papers and a general discussion on that very practical subject.

Among the papers read before the Central Medical Association during the year have been: "Summary of Thirty-Five Years Experience in the Treatment of Incipient Tuberculosis," by Vincent Y. Bowditch; "Intracranial Murmurs," by F. K. Hallock; "Medical Practice in Colombia, South America," by J. L. Burnham; "Duties of the Surgeon at the Front," by E. Kilbourne Tullidge; "Chemical Examinations of the Blood in Renal Insufficiency," by Victor C. Myers.

We are fortunate to have in our community one of the leaders in public health education, Dr. Kate C. Mead, who has done much in the training of the people in general hygiene and especially in the care of infants, and who is now vigorously preparing for a "baby week" in the early part of June. Dr. Mead is only one example of the many in our profession who are working unselfishly for the protection of the ignorant and the helpless.

Our hospital is doing excellent work. With the recent appointment of an interne and of a first class pathologist, our institution ranks among the best of the small hospitals.

Respectfully submitted,

GEO. N. LAWSON,  
*Councilor.*

(g) Tolland County, by Dr. Thomas F. Rockwell:

*Mr. President and Gentlemen of the House of Delegates:*

Nothing of unusual interest has occurred during the year in Tolland County.

The Association held two meetings during the year. The Semi-Annual Meeting was held at Stafford Springs, Tuesday, October 19, 1915. Dr. Henry F. Stoll of Hartford read a paper on "Syphilis We See but do not Recognize." Dr. Calvin H. Elliott of Hartford read a paper on "Some Points in the Pathology of Pregnancy of Special Interest to the General Practitioner." Dr. John F. Hackett of Mansfield read a paper on "Epilepsy."

The Annual Meeting of the Association was held at Rockville, Tuesday, April 18, 1916. Dr. Howard W. Brayton read a paper on "Digestion and its Disorders in Infancy and Childhood." Dr. C. Weidner of Hartford gave a very interesting and instructive talk on "Diagnosis and Treatment of Eye Diseases," which was illustrated by lantern slides in colors. Dr. Donald L. Ross of Mansfield read a paper on "Mental Condition of Epileptics." The papers were all exceptionally interesting. The Association lost one member, by resignation.

Respectfully submitted,

THOMAS F. ROCKWELL,  
*Councilor.*

(5) Report of the Treasurer, Dr. Phineas H. Ingalls (Hartford):

The Treasurer's Report is submitted in two parts: first part, Accounts of J. H. Townsend, Treasurer, June 1, 1915—January

26, 1916; second part, Accounts of P. H. Ingalls, Treasurer, January 26—May 17, 1916.

### FIRST PART.

J. H. TOWNSEND, TREASURER, IN ACCOUNT WITH THE CONNECTICUT  
STATE MEDICAL SOCIETY.

#### DEBITS.

1915

June 1	Cash from old account .....	\$685.43	
Nov. 2	L. F. La Pierre, New London County .....	42.93	
	Sale 1 copy <i>Proceedings</i> .....	1.00	
20	W. E. Hartshorn, New Haven County ....	500.00	\$1,229.36
		<hr/>	

#### CREDITS.

Aug. 4	Mabel W. Carter, Stenographer .....	\$122.39	
5	Tuttle, Morehouse & Taylor Co. ....	99.67	
6	Hartford Medical Society .....	10.00	
	E. Terry Smith, Anniversary Chairman ...	32.75	
Dec. 9	Middlesex County Medical Association, one-half Expense Semi-Annual Meeting	17.92	
July 22	Lomas & Nettleton .....	5.00	
Nov. 1	The Union & New Haven Trust Co. ....	5.00	
	Cash in Second National Bank, New Haven	936.63	\$1,229.36
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Audited and found correct, February 10, 1916.

S. M. GARLICK,  
W. H. CARMALT,  
*Auditors*

### SECOND PART.

P. H. INGALLS, TREASURER, IN ACCOUNT WITH THE CONNECTICUT  
STATE MEDICAL SOCIETY.

#### DEBITS.

1916

Jan. 26	Executor Estate O. C. Smith, Bequest .....	\$1,000.00	
Feb. 10	Cash from Second National Bank, New Haven, J. H. Townsend Account .....	936.63	
	Rebate on Safe Deposit Box Rent .....	3.75	
Apr. 11	M. Bertram Lambert, Fairfield County ....	522.00	
25	L. F. La Pierre, New London County .....	98.30	

May 4	Laura H. Hills, Windham County .....	\$137.70	
	W. E. Hartshorn, New Haven County ....	245.20	
6	J. H. Kingman, Middlesex County .....	110.70	
8	A. R. Keith, Hartford County .....	577.80	
	C. H. Turkington, Litchfield County .....	177.30	
12	C. H. Turkington, Litchfield County .....	8.10	
	E. P. Flint, Tolland County .....	32.40	\$3,849.88
		<hr/>	

## CREDITS.

1916			
Feb. 15	Phoenix National Bank, Box Rent .....	\$ 4.50	
Apr. 5	Richter & Co., Bond for O. C. Smith Fund	1,011.58	
13	Tuttle, Morehouse & Taylor Co. ....	1,126.87	
	B. A. & A. H. Kinney .....	2.50	
May 12	Marvin McR. Scarbrough, Salary as Secretary .....	150.00	
	Marvin McR. Scarbrough, Expense Account	17.94	
	Estate of J. H. Townsend, Salary as Treasurer to Jan. 26 .....	17.18	
13	P. H. Ingalls, Salary as Treasurer to May 17	7.82	
	Cash in Bank .....	1,511.49	\$3,849.88
		<hr/>	

## RUSSELL FUND.

1916			
Feb. 10	Received from Connecticut Savings Bank	\$1,394.45	
11	January Coupons, Conn. Railway & Lighting	112.50	
	January Coupons, Consolidated Railway Co.	40.00	\$1,546.95
		<hr/>	

## DISBURSED.

Apr. 5	1 Hartford City Gas Light Bond .....	\$1,011.59	
	Cash in Mechanics Savings Bank .....	535.36	\$1,546.95
		<hr/>	

The fund consists of:

- 5 \$1,000 Mortgage 4½% Bonds, Conn. Railway & Lighting Co.
- 2 \$1,000 Debenture 4% Bonds, The Consolidated Railway Co.
- 1 \$1,000 1st Mortgage 4% Bonds, Hartford City Gas Light Co.

## THE O. C. SMITH FUND.

Jan. 26	Bequest, Estate of O. C. Smith .....	\$1,000.00	
	Advance from Treasury of State Society ..	11.58	\$1,011.58
		<hr/>	

## DISBURSED.

Apr. 5	Richter & Co., 1 \$1,000 Hartford City Gas		
	Light Co. Bond .....	\$1,011.58	\$1,011.58
	The fund consists of:		
1	\$1,000 Hartford City Gas Light Co. 4% 1st Mortgage Bond.		

Respectfully submitted,

P. H. INGALLS,  
*Treasurer.*

BRIDGEPORT, CONN., May 17, 1916.

This is to certify that we have this day examined the accounts and vouchers of the Treasurer and find the same correct, and the securities listed to be in his possession.

W. H. CARMALT,  
SAMUEL M. GARLICK,  
*Auditors.*

(6) Report of the Committee on Public Policy and Legislation, by Dr. Everett J. McKnight (Hartford):

## REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION.

*Mr. President and Gentlemen of the House of Delegates:*

As there has been no session of the Legislature since the last meeting of this Society your Committee has very little to report. At the last annual meeting it was voted that the chairman of this committee be empowered to obtain from the Attorney-General of the State an opinion on the status of the Connecticut State Medical Society in the matter of licensing practitioners of medicine in the State, a report to be made at the next annual meeting of the Society. In compliance with this vote your chairman consulted the Attorney-General and received from him a verbal opinion that the Connecticut State Medical Society having accepted the Medical Practice Act adopted in 1893 and having not used any right which it previously had as regards the licensing of practitioners of medicine in the State during the intervening years, had abrogated any such rights that it previously had. Not wishing to obtain a written statement from

the Attorney-General until Dr. Calef had had an opportunity to present his side of the question, I have repeatedly tried to arrange a meeting between the two but without avail. The Attorney-General was positive in his assertions that the Dartmouth College case had no bearing upon the points at issue.

In accordance with the provisions in the last sentence of section 3, chapter 8 of the By-Laws, relating to the duties of this committee, "It shall keep in touch with professional and public opinion, shall endeavor to shape legislation so as to secure the best results from the whole people, and shall strive to organize professional influence so as to promote the general good of the community in local, state and national affairs and elections," your Chairman called a meeting of the Committee at the Hartford Club on March 9. There were present the Chairman, Dr. Foote of New Haven County, Dr. Donaldson of Fairfield County, Dr. Burroughs of Windham County, Dr. Hallock of Middlesex County, Dr. Flint of Tolland County, and Dr. Waterman, assistant to the Chairman, and by invitation, Dr. Mailhouse, President of the Society, Dr. Carmalt, Chairman of the Council, Dr. Steiner, Councilor for Hartford County, Dr. Tuttle of the Committee on Medical Examinations and Medical Education and Dr. George Blumer.

The subject of Health Insurance for the Worker was considered and a Committee consisting of Drs. Waterman, Foote, and Blumer was appointed to make a careful study of this matter. Another Committee, consisting of Drs. Hallock, Burroughs, and Tuttle, was appointed to consider the subject of some change in our Medical Examining Boards tending toward the establishment of a single board. A Committee consisting of Drs. Donaldson, Goodwin, and Elias Pratt was appointed to consider the compulsory treatment of drug addicts, examination of drugs and to confer with the Pharmacy Commission in relation to any proposed changes in drug legislation. All these sub-committees were to report to the full committee at a meeting to be held prior to the meeting of the State Society. At meetings of the committee held on May 17, the Sub-Committee on Drug Legislation reported progress and was continued.

The Sub-Committee on a new Medical Practice Act reported progress and was continued and it was voted that the House of Delegates be requested to instruct the Committee on Public Policy and Legislation to secure the passage of a new medical practice act, provided the final draft submitted by said Sub-Committee should be satisfactory to the Medical Examining Board, the Committee on Public Policy and Legislation and the individual members of the Council.

The Sub-Committee on Industrial Insurance reported as follows:

*Resolved:* That the following report be made to the Committee on Public Policy and Legislation at its meeting May 17, 1916:

In consideration of the fact that industrial insurance involves the interests of the medical profession to an extensive degree, and in a complex manner, and that it is expected that a bill will be presented at the next session of the Connecticut Legislature providing for an extension of industrial insurance to cover sickness, it is recommended that the Connecticut Medical Society give careful study to this subject for the purpose of developing a definite and well-advised policy to govern its attitude toward such legislation and its application, and to this end:

1. a. That the Committee on Industrial Insurance be continued to study this subject and to report thereon to the Committee on Public Policy and Legislation, which latter Committee has the exclusive power to represent the interests of the Connecticut State Medical Society in all legislative consideration of this subject; and

- b. That the Committee on Industrial Insurance shall have the power to make such inquiries as it shall deem proper of the members of the Connecticut State Medical Society concerning their opinions on this subject; and

- c. That this Committee shall be authorized to make reasonable expenditures of money in the prosecution of this study and inquiry at the charge of the Connecticut State Medical Society; and

2. That members of the State Medical Society shall be urged to coöperate with the Committee on Industrial Insurance in its

study by answering the inquiries of the Committee faithfully, and by making individual study of the subject, to which end they will be supplied with data by the Committee; and

3. That Industrial Insurance, and particularly Sickness Insurance, shall be made a major subject of discussion by the County Societies at their respective Fall Meetings of this year.

Respectfully submitted,

(Signed) PAUL WATERMAN,  
*Chairman.*

GEORGE BLUMER,  
CHARLES J. FOOTE.

The report was accepted and the Committee continued.

E. J. MCKNIGHT,  
*Chairman.*

(7) Report of the Committee on Medical Examination and Medical Education, by Dr. Charles A. Tuttle (New Haven):

#### REPORT OF COMMITTEE ON MEDICAL EXAMINATION AND MEDICAL EDUCATION.

*Mr. Chairman and Gentlemen of the House of Delegates:*

The Committee on Medical Examination and Medical Education has been a standing committee of the Connecticut Medical Society for twenty-three years and presents herewith its twenty-third annual report. It does so this year for the first time in its dual capacity, *first*, as the Connecticut Medical Examining Board, representing the commonwealth of Connecticut in its police power of testing the qualifications of applicants to practice regular medicine, and *second*, as a Committee of your Society on Medical Education.

The Medical Examining Board has examined during the last year, sixty-nine candidates for certificates of qualification in general practice, of whom forty-seven, or 68.1 per cent, have fulfilled requirements and to whom certificates have been granted

Twenty-two, or 31.9 per cent, have been rejected. This large increase in numbers admitted to the examination—sixty-nine this year as against forty-nine the previous year—and the large increase in failures this year, nearly one-third of all who applied, as compared with approximating one-quarter the previous year, is due to a very obvious and important cause, namely, the very retrogressive amendments to the Medical Practice Act which was allowed to pass at the last sitting of our Legislature. Under it, it has been necessary to admit to the examination nearly twenty-five applicants who were without the preliminary education now demanded by our best medical colleges and our more progressive States. This amendment carried Connecticut into the rear lines of defence and allows this commonwealth, for two more years at least, to be the dumping ground of neighboring states for men whose qualifications would not admit them to the examinations in many other communities. In short, the preliminary educational qualification which was passed nine years ago after great effort and which was to have become effective in 1912 has been allowed, for the sake of whitewashing, to be pushed along by easy stages until now it applies to no one who was graduated previously to January 1, 1915.

Instead of this retrogression it was hoped that the Committee on Public Policy and Legislation would be able to secure the advanced requirement urged by the Medical Examining Board, that was, that a hospital interne year might be added as a requisite for admission to the examinations. As late as November 24, 1914, that committee was memorialized as follows—"We, the members of the Examining Committee, wish to express to the Legislative Committee our conviction that the proposed changes in the Medical Practice Act, viz.: *substituting* for the preliminary requirement the hospital year, is inadvisable, undesirable, and dangerous, and would suggest that if any changes were to be made, that the hospital year be added to the present requirement. (Signed) J. Francis Calif, Pres., J. B. McCook, S. M. Garlick, W. L. Barber, C. A. Tuttle, Sec'y." This, however, was not secured. The proposition is in accord with the request of the Council of Medical Education of the American Medical Asso-

ciation. Already three States have adopted such a requirement, viz.: Pennsylvania, New Jersey, and Rhode Island, and New York and other States are contemplating similar action. The Examining Board would ask again of the Committee on Public Policy and Legislation that the matter be given their serious consideration. Later in the meeting I will submit to the House of Delegates a letter from the Council of Medical Education of the American Medical Association upon this subject and ask for action to be taken.

There was another modification of the Medical Practice Act allowed to pass at the last meeting of the Legislature which is entitled to consideration. This had some good intentions but was so poorly digested and its requirements so impossible of fulfillment as to make the whole somewhat ridiculous. I refer to the amendment allowing all graduates in medicine previous to May 25, 1893, to come into the State without examination or without testing in any way their past or present qualifications. It compels the Examining Board to admit men to practice medicine in this State who are not up to the standard to which the people of Connecticut are at the present time entitled. Further the amendment requires the endorsement of the State Boards of Medical Examiners from the State of which the applicant was last a resident. Such a body did not exist at the time the applicant was licensed, and the present body naturally refuses to endorse anyone of whom it has no record. Under this amendment it has been necessary to admit during the past year twelve men, some of whom are at least of questionable qualification, as measured by any modern standard, even allowing full credit for years in practice.

There was made at the last meeting of the Legislature, and there promises to be made also at the next, an effort to consolidate three of the Boards of Medical Examiners. That is, the Connecticut Medical Examining Board (regular), the Homeopathic Medical Examining Board, and the Eclectic Medical Examining Board. For just what tangible reason the consolidation is desired has not been made clear. There are many other States having multiple boards and there, as here, the work

is carried on successfully and harmoniously and without the friction incident to a mixed board. The work of the Connecticut Medical Examining Board is accepted in all States which regularly accept any outside work. In one week recently three men were approved and accepted by New Jersey, Michigan, and California, respectively.

The greatest menace to enlightened medicine to-day are the drugless sects or Naturepaths. If there is to be any consolidation of Examining Boards, a true regulation and coördination of the practice of the healing art, it ought in justice to the commonwealth, as well as to our profession, to include all sects and kinds of practice. Such a proposition will be offered to the Committee on Public Policy and Legislation for its consideration. It includes the recommendation for a central administration and examination bureau or a Board of Regents, possibly a part of the State Board of Education, to have direct charge of all matters of registration for those who are in any way and by any method holding themselves out as dealing with public or private health. It provides further that one educational standard so far as preliminary education and fundamental medical subjects is concerned, shall obtain for all who profess to have skill in healing bodily or mental ills. We feel that any consolidation which includes three only of those many sects which deal directly with health matters is puerile, weak, etc., a half-way measure, and that something better ought to be attempted if any move at all is worth while. The duties of this Bureau of Regents might naturally be extended to the supervision of dentists, pharmacists, nurses, optometrists, veterinary surgeons, etc.

The details of the last effort at consolidation were so imperfectly worked out and the whole so unfair to the Connecticut Medical Society that it was vigorously opposed and defeated. The advantages were so few and the disadvantages so many that we trust for the present the effort will be abandoned.

An entirely new, modern and model Medical Practice Act, fashioned on the lines of the recently-enacted law of California or Kansas, or upon the lines of the New York law, ought in the near future to receive exhaustive consideration.

An attempt was made also at the last meeting of the Legislature to pass another law inimical to the best interests of our profession, and taking away from our Society another of its few remaining legal prerogatives. I refer to the effort to take out of the hands of the Examining Board the power of revoking the certificates which it had granted and putting that power into the hands of the courts, thus taking out of the hands of the medical profession and putting into the hands of lawyers the power to say who should practice medicine among us. Of course, this was vigorously opposed by many, especially by some members of the Examining Board with the endorsement of and acting as messenger for their County Society. The measure was defeated as also was an effort to recall it. The condition now remains as before,—namely, that the Examining Board *may*, after the *conviction* of an offender for felony, petition unanimously the State Board of Health for a revocation of the license. Better had the original law left the revocation power with the Medical Examining Board.

In July last, it was decided by the Examining Board that it was inadvisable to accept for examination graduates of Class C Medical Colleges, and it was so voted. This is also in accord with the practice in thirty-five States. It is hoped and expected that it will soon be for the best interests of Connecticut to refuse also Class B graduates.

The Regular Examining Board has not thought it wise, for very tangible reasons, commercial, judicial, and professional, to endorse the certificates of other States. The details of these reasons are at hand for any one interested.

In November, 1915, was considered the case of Dr. J. Morris Slemmons, who has recently been called to the Chair of Obstetrics in the Yale Medical School. Dr. Slemmons applied under the "special fitness" rule recently adopted. As his record and credentials showed that he had special merit in scientific and professional attainments his case was given special consideration. It was voted that certificates be granted to him without examination. All others—eight in number—applying under this rule were rejected.

Evidence being presented—an attested copy of the court records—that George E. Sleeper of Hartford had plead guilty to a charge of abortion and had been sentenced to the penitentiary, it was voted that the Board request the revocation of his license. This was done in a communication to the Secretary of the State Board of Health, and signed by all members of the Board as follows: “Pursuant to request and evidence furnished us, which evidence is herewith enclosed, we, the members of the Connecticut Medical Examining Board request the revocation of the license to practice medicine in the State of Connecticut of George E. Sleeper of Hartford.” The matter has recently been acted upon by the State Board of Health.

With this year ends the term of Dr. Garlick as a member of the Medical Examining Board. It is due him to say that no one who has ever been a member of that Board has given to its work and its problems more sincere and devoted service. It is difficult for one who has not been associated with him in this work to appreciate his untiring and self-sacrificing loyalty to it, or to be able to measure his value to the State, its people, and his profession. He has given so much of himself, his time, and his mature counsel, that he stands to-day in possession of facts and a knowledge of conditions which make him invaluable in the work. I can pay him no higher compliment than to say that in this, as in all things, he has been Dr. Garlick. It is the earnest wish of his colleagues that his valuable services be acknowledged by continuing him upon the Board—a work in which he is much interested and enjoys.

This year, at the suggestion of the President, a copy of the rules under which the Board is acting and the list of successful candidates for the year will not be presented.

Respectfully submitted,

CHARLES A. TUTTLE,  
*Secretary.*

(8) Report of the Committee on Scientific Work, by Dr. Frank W. Stevens (Bridgeport):

## REPORT OF THE COMMITTEE ON SCIENTIFIC WORK.

*Mr. President and Gentlemen of the House of Delegates:*

The Committee on Scientific Work presents the accompanying programme for this annual meeting of our State Society.

In its preparation we have followed the usual custom of dividing the subjects so that the scientific session on the first day is devoted to the specialties in medicine, while the two sessions on the second day are assigned to surgery and medicine respectively.

Your committee thought best to change the time of the President's address from 12 o'clock noon to 2:30 P. M. of the second day. This will bring the President's address the first order of business in the afternoon of the second day and not at the end of a long morning session with the usual interruption of the reading of some paper or its discussion.

## WEDNESDAY AFTERNOON, MAY 17, 1916.

*The Prevention of Blindness in Infancy and Childhood*—Eugene M. Blake, New Haven. (Discussion opened by Henry S. Miles, Bridgeport.)

*What Attitude Should the Physician Take Toward Sicknes Insurance?*—George Blumer, New Haven. (Discussion opened by D. Chester Brown, Danbury.)

*Onanistic Dyspepsia*—Louis M. Gompertz, New Haven. (Discussion opened by Reuben A. Lockhart, Bridgeport.)

*Results of Routine Study of the Placenta*—J. Morris Slemons, New Haven. (Discussion opened by Richard F. Rand, New Haven.)

*Mental Defectives*—Paul Waterman, Hartford. (Discussion opened by William R. Miller, Southington.)

## THURSDAY MORNING, MAY 18, 1916.

*The Contribution of the Roentgen Ray to Gastrology*—W. A. LaField, Bridgeport. (Discussion opened by Louis M. Gompertz, New Haven.)

*Lessons Learned from the Work of the Past Year*—E. J. McKnight, Hartford. (Discussion opened by E. R. Lampson, Hartford.)

*Motion Picture and Lantern Slide Demonstration of Methods of Precision in the Treatment of Fractures*—George W. Hawley, Bridgeport. (Discussion opened by Joseph M. Flint, New Haven.)

*Motion Picture Demonstration. Operations: Bone Graft for Pott's Disease, Bone Graft Peg for Fracture Neck of Femur, Inlay Graft for Fracture of Long Bones, etc.*—Fred. H. Albee, New York City (by invitation). (Discussion opened by A. A. Crane, Waterbury.)

THURSDAY AFTERNOON, MAY 18, 1916.

*Some Defects and Inconsistencies in Connecticut Statutes and Medico-Legal Procedures*—Max Mailhouse, New Haven.

*The Clinical Study of the Respiration*—Dr. David L. Edsall, Boston, Mass., Professor of Clinical Medicine, Harvard University (by invitation). (Discussion opened by Prof. Yandell Henderson, New Haven—by invitation.)

*Some of the Commoner Irregularities of the Heart*—Charles W. Gardner, Bridgeport. (Discussion opened by George Blumer, New Haven.)

*The Starvation Treatment of Diabetes*—Walter R. Steiner, Hartford. (Discussion opened by William Porter, Jr., Hartford.)

Respectfully submitted,

FRANK W. STEVENS,  
Chairman.

(9) Report of the Committee on Honorary Members and Degrees, by Dr. William H. Carmalt (New Haven):

#### REPORT OF THE COMMITTEE ON HONORARY MEMBERS AND DEGREES.

*Mr. President and Gentlemen of the House of Delegates:*

The Committee beg leave to report the names of Dr. Richard P. Strong of Harvard University, Professor of Tropical Medi-

cine, and of Dr. Herman M. Biggs of New York, as candidates for honorary membership in our Society.

It has been the object of the Committee for some years in the past that these nominations should be made only to persons who have done good, not from any personal reason, who have more or less international reputations. I think it would be an insult to this House of Delegates to speak of the qualifications and the work these two men have done.

(10) Report of the Committee on Arrangements, by Dr. Frank M. Tukey (Bridgeport):

#### REPORT OF THE COMMITTEE ON ARRANGEMENTS.

*Mr. President and Gentlemen of the House of Delegates:*

The Committee on Arrangements has nothing special to report except that we are prepared to carry out the programme that has been arranged. There is a smoker to-night to which you are all invited. It is to be held downstairs in the rathskeller; and the banquet to-morrow night. We would like to have all those who have not purchased tickets to do so at once. There is one point in regard to the arrangement of the programme for Thursday morning. It will be necessary to hold part of the meeting, the larger part of it, at the University Club. Dr. LaField's paper and Dr. Albee's paper require lantern slides. The club is a street or two from here. I would suggest that Dr. McKnight's paper come first or last so as not to break up the session. You will notice that Dr. McKnight's paper comes between Dr. LaField and Dr. Hawley's, but if some arrangements could be made whereby Dr. McKnight's paper could come first or last it would save some walking.

It was then voted that the entire Thursday morning meeting be held at the University Club.

(11) Report of the Committee on a Sanatorium for the Nervous Poor, by Dr. Frank K. Hallock (Cromwell):

Dr. Robinson, the chairman of the committee, is not here, but I may say for him that there has been no active work engaged

in by the committee. The time has not seemed to be propitious to appeal to the legislature for the establishment of such a sanatorium. When that time arrives the committee will be ready to act and present the matter to the House of Delegates.

(12) Report of the Committee on a State Farm for Inebriates, by Dr. F. H. Barnes (Stamford):

## REPORT OF THE COMMITTEE ON A STATE FARM FOR INEBRIATES.

*Mr. President and Gentlemen of the House of Delegates:*

I don't know whether I am out of order in giving a verbal report on this meeting. The committee voted not to present a report at the last meeting, but my report stated that we had passed the matter up because we thought there was no chance in the last legislature in getting through a bill for a state farm for inebriates. Subsequently we found that Dr. Alcorn had introduced a bill which provided an appropriation of five thousand dollars and tacked the state farm on the land of the Norwich State Hospital, which we didn't favor. Personally, I didn't believe that a state farm for inebriates should be connected with a state asylum for the insane. But the move, so far as I can find out, has proved very successful. With the small appropriation they had at hand they have a building which takes care of about seventy-five patients and they are doing a very good work. They give them three weeks' preliminary vigorous treatment, and later on give them some outdoor work. How well that is carried on we do not know. The feeling of the committee was that we should have a farm separately located. There should be a tract of land established from three to five hundred acres with proper buildings. These patients could be sent there on a term sentence or on an indeterminate sentence, which cannot be done at the present time. Also, voluntary patients should be accepted there so that if a man wanted to apply to a state institution to be treated for alcoholism he could do so without having to go through court proceedings. That scheme works out very

nicely in Massachusetts. We still believe that we should have a state farm independent of either of the state institutions. The plan of having them do active work in agricultural lines and manufacturing lines should be carried out. This committee asked to be discharged at the last meeting of the Society. Some way or other, perhaps in the haphazard way in which I presented my report, that action was not taken. We feel that, perhaps, it would be better to get a new committee. We carried this thing through the State Legislature four years ago and up to the Governor's hands, with a lot of arduous work, and for some reason he turned the proposition down. But it is surprising to know the amount of opposition we had, not only from people at large in the State, but we found we had to coöperate with other organizations which were antagonistic with our ideas. They did not think we were going at it right; they did not want a medical man for superintendent. We put our backs up and said we wouldn't stand for anything else; we wanted a medical man at the head of the institution. We also insisted that certain lines should be carried on; a number of societies were interested and three different bills presented. We finally fought the thing out and got together with the other societies and worked out a bill which was efficient and we got a report made and passed it through the Legislature, and was turned down by the Governor. Mr. President, we ask that we may be discharged and that a new committee be appointed to carry it out.

It was voted that the Committee be continued.

(13) Report of the Committee on Medical Inspection of Schools:

## REPORT OF THE COMMITTEE ON MEDICAL INSPECTION OF SCHOOLS.

*Mr. President and Gentlemen of the House of Delegates:*

Dr. Goodenough, Chairman of the Committee on School Inspection, who is unable to be present, has requested me to furnish a report of the work of the committee. You will recall

that at the last session of the Legislature the permissive law formerly in force was amended so as to make some form of inspection mandatory in communities of more than ten thousand inhabitants. The law as it stands contains some contradictions, and is hardly a workable statute; it will, however, be a basis for future legislation. The committee has held one meeting at which the necessary changes were discussed, and plans were made by which it is hoped the different groups of people interested may be enabled to unite on amendments to be presented to the next legislature.

Respectfully submitted,

C. P. BOTSFORD,  
*Clerk of Committee.*

(14) Report of the Committee on National Legislation, by Dr. Everett J. McKnight (Hartford):

#### REPORT OF THE COMMITTEE ON NATIONAL LEGISLATION.

*Mr. President and Members of the House of Delegates:*

Your delegate attended the annual Congress of Medical Education, Public Health and Medical Licensure which was held in Chicago, February 7th and 8th of this year.

In his opening address Dr. Bevan, Chairman of the Council on Medical Education, among other things, stated that: 1. We now have as a standard of medical education a seven-year course of study, as high a standard as adopted by any country in the world. 2. To-day an undergraduate can obtain a better undergraduate training in medicine in the United States than in England, Germany, France or Austria. 3. Steps are being taken to make the hospital interne year a legal requirement to practice medicine.

The Secretary of the Council, Dr. Colwell, gave some interesting data in regard to the changes in the number, standards and financial conditions of medical schools during the last twelve

years. There was a symposium on the Relation of the Laboratory Courses to the Work of the Clinical Years, with papers by Dr. Lyon of Minneapolis, Dr. Barker of Baltimore, Drs. Ewing and Lee of New York. The discussion was carried on by Drs. Councilman of Boston, Billings of Chicago and Coffey of Portland, Oregon.

Considerable time was taken up with the consideration of the National Board of Medical Examiners. Reasons for the necessity for such board were explained by President Rodman. Its Relationship with the Government Medical Service was discussed by Surgeon-General W. C. Gorgas of the Army, Surgeon-General W. C. Braisted of the Navy and Dr. John W. Kerr, Assistant Surgeon-General, United States Public Health Service, representing Surgeon-General Ruppert Blue. Its Relationship with the State Medical Licensing Boards was the title of a paper by Dr. Herbert Harlan, President of the State Examining Board of Maryland; Educational Standards by Dr. Victor C. Vaughn of Ann Arbor; Details of Operation and Examination by Dr. Isadore Dyer of New Orleans, were read, after which there was a general discussion of the subject.

In the evening there was a meeting of the Federation of State Medical Boards of the United States at which several papers were read. One by Dr. George H. Matson, Secretary of the Ohio State Medical Board, upon the Regulation of Drugless Practitioners is of special interest. The greater part of the evening was devoted to a discussion of the National Examining Board. Your delegate, although not a member of the Federation, obtained the privilege of the floor to correct a misstatement which had been made in regard to the standing of this matter in the House of Delegates and is incorrectly reported in the Journal as favoring the National Board.

On the 8th the meeting was given over to the Council on Health and Public Instruction with the late Dr. Henry B. Flavel of Chicago, chairman. I cannot allow this occasion to pass without expressing my deep appreciation of the executive ability, sagacity and foresight of Dr. Flavel whom I have known intimately for several years and whom I had come to consider one

of my best friends. It will be impossible to find anyone to fill his place.

There was a discussion upon Medical Practice Acts and a description of the new Tennessee law which provides for a preliminary examination by a board of laymen.

In the afternoon Dr. Charles V. Chapin of Providence made his report on State Public Health Organizations which he has been investigating for some time. Dr. John W. Kerr of the Public Health Service read a paper upon Some Essentials of Public Health Organizations, after which there was a general discussion upon Public Health Organizations.

EVERETT J. McKNIGHT.

(15) Report of the Committee on Public Health Education, by Dr. Kate C. Mead (Middletown):

## REPORT OF THE COMMITTEE ON PUBLIC HEALTH EDUCATION.

Read by the Secretary.

*Mr. President and Gentlemen of the House of Delegates:*

Having been appointed Chairman of the above committee after the death of Dr. Townsend, last February, it seemed best to take an inventory of the health educational work which was being done in this State by various organizations, and estimate the efficiency of the members of the Medical Society in aiding and even pushing such work, for we know that the development of the health of any community depends upon the earnest coöperation of the members of the medical fraternity. That such a coöperation would be of benefit to the private practitioner as well as to society at large cannot be doubted. A comparatively healthy population can afford to pay its doctor's bills, and therefore philanthropy, as a physician's specialty, will go out of fashion when a balance can be maintained between the socially inclined laity, who make health legislation, and the medical profession. If the doctors would work together, instead of individually, for

the prevention of sickness, there would be fewer patent medicines bought, less alcoholism with its consequent poverty, and more patients with a bank account, for it is evidently no part of the scheme of creation to abolish sickness, accidents, or war.

That there is a lack of coöperation between the State Medical Society and the State Board of Education and the State Board of Health is shown by the sins of omission in the medical examination of school children, and in the lack of interest in the enforcement of health ordinances in all our cities. Doctors, as a rule, seem to take less interest in child welfare, tenement-house reform, pure food, and the abolition of patent medicines, than ministers or college professors, when, in reality, the care of the public health is theirs by right of their medical diplomas.

Therefore your committee is trying to foster coöperation between the State Medical Society and various lay organizations throughout the State. That there is no lack of individual interest among the doctors may be seen from the great amount of work done by inadequately paid town and city health officers, men who serve their communities as well as their limited time will allow, and give ten dollars worth of time for every dollar of compensation. But this sort of philanthropy falls very short of making an ideal health center in a city, and it should not be endorsed by the Medical Society when a better method has been shown for constructive health work in neighboring states. In Connecticut the health of each county is entrusted to a lawyer rather than to a doctor, and lay-politicians rule our institutions for the care of defectives, alcoholics, and epileptics, as well as tubercular patients, while Christian Scientists and Chiropractics divert the minds of our law-makers from the needed medical vigilance over our school children.

None of the members of this Medical Society will deny that we need a large school and hospital for defective children, but the work for a realization of the project is left to a few self-sacrificing individuals. Nor will any one deny that the Anti-Tuberculosis Commission needs adequate medical supervision rather than that of office-seeking, self-aggrandizing politicians. Our Society of Charities and Correction contains few medical

names among its workers, and yet no one knows the number of preventable deaths even among our foundlings. Our Epileptic Colony is in a deplorable condition for want of funds to house its mild cases, and the Medical Society commits itself to a policy of watchful waiting in behalf of the unfortunates who must share their living and dining rooms with the insane or demented.

Moreover, as for the question of industrial preparedness we must ask ourselves if we, as a society, are urging the medical inspection of the workers in factories, to ascertain their physical fitness for work, and thus, by a consequent plan of sickness-prevention, secure for the laborer a minimum of absence from work—computations being determined that one-half the industrial sickness is preventable.

In addition to the foregoing claims for more coöperation between medical and lay organizations for the sake of health education, we need whole-time medical town- and county-health officers, more pediatric specialists to oversee the work of pre-natal nursing, and of milk stations, in all parts of the State. We should have more whole-time medical inspectors of school children, and open-air schools for those who need such care, also dental clinics for the destitute. We must work with the granges in behalf of rural sanitation, for it has been found that sixty per cent of the country school children suffer from some defect which interferes with their getting the most good from their education. That these needs are not visionary may be seen from Dr. Chapin's Report to the American Medical Association of the health work done by our State as compared with that of our neighbors. Not that our State Laboratory is deficient, or that individual cities are dealing inadequately with these problems, but the rank and file of hygiene workers need reinforcements from the State Medical Society in order to expedite matters and achieve lasting results worthy of our State.

With this end in view the chairman of the Public Health Education Committee wrote urgent letters to the other members of the committee and to the members of the same committee in the Connecticut Research Association, hoping thereby to bring about coöperation between the two societies. Numerous letters

were also sent to individuals in each county who were connected with lay organizations asking them to coöperate with their physicians in the matter of health education of the general public, and also to promote a child welfare day or week in every community. Many letters were sent to ministers, and to librarians, district nurses, school nurses, as well as to school principals in Middlesex County, and in rural districts elsewhere, recommending their attention to a child welfare week. Nearly three hundred letters were sent from the headquarters of this committee, to say nothing of the work of other members of the committee.

It is perhaps too early to look for results from all these notes, or for reports from each member of the committee in each county. For various reasons three of the counties have not been responsive to the movement, and nothing has been heard of activities in Windham, Tolland, or New London counties. In the remaining counties, however, there is considerable activity. Fifteen towns or cities have had, or will have soon, Child Welfare Weeks. This does not mean that this particular committee has been responsible for these celebrations, but they were all undoubtedly caused primarily by the wave of interest created by the Federal Children's Bureau and by the Public Health Education Committee of the American Medical Association, together with the Metropolitan Life Insurance Company, and the Better Babies Bureau of the Woman's Home Companion, in all of which work the members of the Connecticut Medical Society have had a large part.

In Middlesex County there have been numerous lectures given by physicians before good audiences, in towns and country districts; and the county newspaper has been liberal with space and reports of such meetings. This county will have a Child Welfare Week in June.

In Hartford County, Dr. Maude W. Taylor has given six health lectures in five different towns, and has sent out about one hundred and fifty circular letters to lay women's clubs, inquiring what health work was being done by each club, and offering assistance in such work. It was found that many of

the women's clubs are supporting district nurses, and they are anxious to do more health work next year. Dr. Taylor is also one of the lecturers in a short educational course for Dental Hygienists, in Hartford, held under the auspices of the Principals' Club. Five other members of the State Medical Society are also assisting in this course of lectures.

In Fairfield County there is a great deal of health education in connection with the work of Dr. Florence Sherman, the Medical Inspector of the Bridgeport schools; mention should also be made of the work of Dr. Warner for the prevention of blindness, although no definite report of the work of these members of this committee has been sent to the chairman. Several of the towns and cities in Fairfield County are interested in a Baby Week.

In New Haven County some of the work of Dr. Arnold has been unavoidably dropped, but New Haven has long been awake to its duties in this regard. Dr. Bradstreet, of Meriden, and Dr. Goodenough, of Waterbury, are taking up the problems in their towns.

Much more work could be accomplished by this committee if it could obtain funds with which to purchase postage stamps, pay for printing, telephoning, etc. In Massachusetts the Public Health Education Committee is allowed \$75.00 a year for such purposes, and in New York State an even larger sum is allowed. The sum already expended for the chairman's part of the work in this State is \$14.89, and much more will be needed when the entire committee shall agree on a plan of coördinate health education together with the other existing agencies of our State. Live members are needed for the personnel of the committee, and the chairman would recommend the following names for 1916-1917:

Dr. J. G. Stanton, New London.

Dr. W. B. Bissell, Lakeville.

Dr. Maude W. Taylor, Hartford.

Dr. Florence Sherman, and Dr. G. H. Warner, Bridgeport.

Dr. Jessie W. Fisher, Middletown.

Dr. G. M. Burroughs, Danielson, and Dr. Laura H. Hills, Willimantic.  
Dr. T. F. Rockwell, Rockville.  
Dr. H. S. Arnold, New Haven.

Respectfully submitted,

KATE C. MEAD.

It was voted that the report be accepted and that the committee be reimbursed for the outlay. It was also voted that the incoming President take into consideration the recommendations of the chairman in appointing the committee.

It was voted that a sum not exceeding fifty dollars a year be appropriated for use of the committee.

(16) Report of the Delegates to the American Medical Association, by Dr. Everett J. McKnight (Hartford):

#### REPORT OF DELEGATE TO THE AMERICAN MEDICAL ASSOCIATION.

*Mr. President and Gentlemen of the House of Delegates:*

For the first time in several years Connecticut was represented in the House of Delegates of the American Medical Association by only one delegate. The Sunday afternoon before the meeting the secretary of the Association said to me, "By some mistake your name appears as Chairman of the Committee on Credentials instead of that of Dr. Brown," and asked me if I would hold down the position until Dr. Brown arrived, which I endeavored to do to the best of my ability.

The meeting was harmonious as a rule, the work being largely routine. I have so many times called your attention to the immense amount of good which is being done by the different councils and committees of this Association that I feel it is not necessary to go into that matter in detail at this time.

I wish to call your attention especially to the work of the Council on Pharmacy and Chemistry. You are all probably familiar with the reports that appear from time to time in the

Journal of the work done by this Council, especially in its exposure of fraudulent proprietary medicines. The influence of the Council in its ten years since its creation has been enormous, and this influence has extended to Europe, especially to England and Germany. It has checked, if not stopped, the excessive introduction of the fraudulent or unscientific proprietary mixtures that so long disgraced American medicine. By its exposure of fraudulent proprietary medicines it has so interfered with the manufacturers in that line that they are now arrayed against the American Medical Association in a three hundred thousand dollar suit for damages instituted by the Wine of Cardui Co. of Chattanooga, Tenn.

The report of the Judicial Council contains valuable information in relation to Workmen's Compensation and Health Insurance for the Worker, subjects which are of vital interest to us at the present time.

The report of the sub-committee on Expert Medical Testimony is well worth consideration. The bill proposed is limited to expert testimony in criminal cases in which the plea of insanity is raised. It provides that whenever in a trial of a criminal case the issue of insanity on the part of the defendant is raised the judge may summon one or more, not exceeding three, disinterested qualified experts to testify. This shall not preclude the prosecution or defense from using other expert witnesses at the trial. If in a criminal case the issue is raised that the defendant is insane so that he should not be tried, the judge shall commit the defendant to a state hospital for the insane, to be detained there for purposes of observation for a period not to exceed three months. All expert witnesses shall have free access to the defendant for purposes of observation. This provision is already a part of the laws in five states and has proven practical and useful. It is provided that after having examined and having observed the defendant the expert witness may prepare a written report regarding the condition of the defendant which he may read at the trial. This is considered important, as it enables a physician testifying as an expert to bring into court concise statements of his findings and the reasons for his conclusions. There

was also provided an extension of the Leeds system to the effect that expert witnesses after having examined the defendant may consult before testifying and may prepare a joint report regarding the mental condition of the defendant.

The work of the Council on Health and Public Instruction under the chairmanship of the late Dr. Henry B. Flavel was mainly devoted to:

1. A thorough investigation of present public health conditions in the United States with a view to securing more accurate information on all phases of the public health programme than is now available.

2. Education of the public by every possible means in order that the people may understand the enormous advances in scientific medical knowledge during the last generation and the possibility of utilizing such knowledge in the prevention of disease, the reduction of the death rate and the prolongation of human life.

3. The crystallizing of such educated public sentiment in necessary public health laws, regulations and ordinances which will render possible a conservation of human life, commensurate with our advancing knowledge and which will render such laws more effective through an educated and enlightened public opinion.

The reduced appropriation because of financial conditions rendered it impossible for the council to develop any new lines of work. The Press Bulletin, Speakers' Bureau and Bureau of Literature were continued as heretofore.

Some of the most effective work of the Council is being carried on through sub-committees; a Committee on Women's and Children's Welfare, a Committee on Conservation of Vision, a Committee on Cancer, a Committee on Coöperation with the National Education Association, a Committee on Uniform Regulation of Membership, a Committee on Medical Expert Testimony, all of which are doing excellent work.

The Council on Medical Education has as usual accomplished much excellent work. Considerable attention has been given to Graduate Medical Instruction.

The Committee on Anesthesia has arranged for the publication of monographs on Intratracheal Insufflation by Dr. Samuel Meltzer and on the Theory of Anesthesia by Dr. Evarts Graham.

A resolution was passed recommending the repeal of section 6 of the Harrison Narcotic Law which permits the indiscriminate sale and use of narcotics when they are contained in proprietary and stock preparations.

Another resolution was passed petitioning the President of the United States and Congress to create a commission to investigate patent and proprietary remedies to the end that the people shall have a plain, truthful and unprejudiced report of the actual value of such articles. Other resolutions were adopted relating to proprietary infant foods, Medical Milk Commissions, etc.

President Rodman, who has since died, in his address outlined the plan of the National Examining Board to which he had given a great deal of time and thought and with which you are probably all familiar. The Reference Committee on Reports of Officers presented a majority and minority report, the former recommending that the House of Delegates endorse the plan, the latter presented by Dr. Mitchel of Lincoln, Neb., recommending that the matter be referred to the Council on Medical Education for consideration and report at the next annual meeting. Many of us felt that the American Medical Association should not endorse a self-constituted board without more time for consideration and investigation. After the discussion, in which your delegate took part, the minority report was adopted.

Surgeon-General Ruppert Blue of the Public Health Service was elected President for the coming year after a rather strenuous campaign. Detroit was selected for the next meeting place, the time of meeting to be decided by the trustees.

It is with great sorrow that I have to record the deaths of President William H. Rodman, first Vice-President Wisner R. Townsend of New York, and Henry B. Flavel of Chicago, Chairman of the Council on Health and Public Instruction, all of whom for some time have taken an active part in the affairs of the Association and with whom your delegate was personally well acquainted.

EVERETT J. MCKNIGHT.

(17) Report of the Committee on Medical Defense, by Dr. William R. Miller (Southington):

## REPORT OF THE COMMITTEE ON MEDICAL DEFENSE.

*Mr. President and Gentlemen of the House of Delegates:*

Your committee, appointed to investigate the advisability of adopting medical defense for its members, as an integral part of this state society, beg to report as follows:

The committee have gone deeply into the reports and data of the twenty-four states now furnishing defense to their members, and from information gained from this source, believe that the Connecticut Medical Society should provide for defense of its members against suits for malpractice.

First, because of the almost absolute protection as regards outcome.

Second, because of the minimum cost, and

Third, because of the unification of the profession and society.

The committee recommend that a committee of three be appointed to draft and present to the society, amendments to its by-laws necessary to provide for medical defense for its members.

W. R. MILLER,  
F. H. WHEELER,  
E. J. McKNIGHT.

It was voted that a committee of three be appointed by the President to report at to-morrow morning's session.

The President appointed the following committee: Dr. William R. Miller, Dr. Frank H. Wheeler, Dr. E. J. McKnight.

## MISCELLANEOUS BUSINESS.

On motion of Dr. Charles A. Tuttle it was voted to refer the following communication to the Committee on Public Policy and Legislation with instructions to make efforts toward having the recommendation adopted:

535 NORTH DEARBORN STREET, CHICAGO,  
April 27, 1916.

DR. CHARLES A. TUTTLE,  
Secretary, Connecticut State  
Board of Medical Examiners,  
New Haven, Conn.

DEAR DOCTOR TUTTLE:

As you doubtless remember, the "ideal" standard of medical education which was advocated by the Council on Medical Education in 1905 included, among other things, a year's internship in an approved hospital. The standard which at that time was referred to as "ideal" has now, with the exception of the hospital internship, become the requirement in thirty-three states, including Connecticut.

We should be much pleased if, at its next meeting, your Board would consider the question of requiring, either at present or at some specified time in the future, in addition to graduation from a recognized medical college, the completion of an internship in an approved hospital as a qualification for the license to practice medicine in your state.

It should be stated that at present between 75 and 80 per cent. of all graduates of the better medical colleges are voluntarily securing such internships. Medical college deans have frequently stated that they have more requests for interns than they have been able to fill, and that as a rule the students who fail to secure such internship are the very ones who should be required to have that training. It would appear, therefore, that such a requirement by your Board would not work a hardship on any deserving physician but, on the other hand, would do much to guarantee for the people of your state better trained practitioners of medicine.

Already three state licensing boards—those of Pennsylvania, New Jersey and Rhode Island—have adopted the requirement, and we understand that New York and other states are contemplating similar action.

Awaiting with interest your reply, we are

Very truly yours,

COUNCIL ON MEDICAL EDUCATION,  
Per N. P. COLWELL,  
*Secretary.*

Adjourned until 8:30 A. M. to-morrow.

THURSDAY MORNING, MAY 18, 1916.

The second meeting of the House of Delegates was held at 9 A. M., May 18, 1916, at the Hotel Stratfield, 1243 Main Street, Bridgeport, Conn. The President, Max Mailhouse, presided.

The following responded to the roll call: Councilors, Dr. Walter R. Steiner (Hartford County), Dr. William H. Carmalt (New Haven County), Dr. Patrick J. Cassidy (New London County), Dr. W. H. Donaldson (Fairfield County), Dr. George N. Lawson (Middlesex County); Delegates: Hartford County, Dr. A. C. Heublein, Dr. Everett J. McKnight; New Haven County, Dr. F. H. Wheeler, Dr. C. W. Comfort, Dr. F. W. Wright, Dr. F. N. Loomis; New London County, Dr. John G. Stanton; Fairfield County, Dr. F. H. Coops, Dr. George E. Noxon, Dr. J. R. Topping, Dr. F. H. Barnes, Dr. F. I. Nettleton, Dr. W. S. Randall; Windham County, Dr. George M. Burroughs; Litchfield County, Dr. Frank H. Lee; Tolland County, Dr. Donald L. Ross.

The next order of business being the election of officers, the Secretary read the list of nominations prepared by the Council and as reported by the Chairman of the Council.

There were no other nominations except for the office of Member of the Committee on Medical Examination and Medical Education. Dr. Samuel M. Garlick, the retiring member of the Committee, was renominated by Dr. W. H. Donaldson. An informal ballot was taken, Dr. Rowley receiving thirteen votes and Dr. Garlick ten votes.

The following officers were elected:

*President*—Samuel M. Garlick, Bridgeport.

*Vice-Presidents*—George M. Burroughs, Danielson; John C. Kendall, Norfolk.

*Secretary*—M. McR. Scarbrough, New Haven.

*Treasurer*—Phineas H. Ingalls, Hartford.

*Committee on Scientific Work*—Wilder Tileston, New Haven; Ernest A. Wells, Hartford.

*Member of Committee on Medical Examinations and Medical Education*—John C. Rowley, Hartford.

*Committee on Public Policy and Legislation*—E. J. McKnight, C. J. Foote, C. C. Gildersleeve, W. H. Donaldson, George M. Burroughs, R. S. Goodwin, F. K. Hallock, Eli P. Flint.

*Committee on Honorary Members and Degrees*—Max Mailhouse, W. H. Carmalt, S. B. Overlock.

It was voted that Dr. Paul Waterman be made assistant to the member from Hartford of the Committee on Public Policy and Legislation.

It was voted that the next Semi-Annual Meeting be held in conjunction with the Litchfield County Medical Society at the time of its Fall Meeting.

It was voted that the next Annual Meeting be held on the fourth Wednesday and Thursday of May, 1917, at New Haven.

It was voted that the dues for the coming year be three dollars per member.

The Committee on Medical Defense submits the following report: That the By-Laws be amended as follows:

#### CHAPTER 8—SECTION I.

Add after the words "A committee on honorary members and degrees" the following: "A committee on medical defense."

Change Section 6 to Section 7.

Insert Section 6:

The house of delegates at its annual meeting in 1917 shall elect a committee on medical defense consisting of three members, one to be elected for one year, one to be elected for two years and one to be elected for three years; and thereafter shall annually elect one member to said committee who shall hold office for a term of three years. The Secretary of the State Medical Society shall be ex-officio a member of this committee and shall act as secretary of the committee on medical defense.

It shall be the duty of the members of the committee on medical defense to investigate all claims for malpractice made against members; to take full charge of all cases which after investigation they have decided to be proper cases for defense, and prosecute such cases to the end, pay all costs of such defense, but they shall not pay or obligate the Connecticut State Medical Society to pay any judgment rendered against any member upon the final determination of any such case. They shall be empowered to contract with such agents or attorneys as they may deem necessary.

*First.* Members shall not be entitled to malpractice defense if the acts in the suit for which they make application for defense were committed prior to their admission to membership in the State Society.

*Second.* A member in arrears with annual dues shall not be entitled to medical defense by the committee.

*Third.* Members who have been dropped for non-payment of dues, if reinstated shall not be entitled to malpractice defense for acts committed during the time they were not members of the Society.

*Fourth.* Active members of the Society desiring to avail themselves of the privileges of this act, shall make application therefor in writing to the Secretary of the Society, and it shall be shown to his satisfaction that they are members in good standing in the State Society. They shall also furnish the Secretary a complete and accurate statement of their connection with, and treatment of, persons upon which complaints against them are based, giving dates of attendance, names and residences of nurses and other persons cognizant of facts and circumstances necessary to a clear and definite understanding of all matters in question, and shall furnish such other relevant information and execute such papers as may be required of them by the Secretary or the attorney of the State Society.

*Fifth.* A member shall agree not to compromise any claim against him, nor to make settlement in any manner without the advice or consent of the Society given through its attorney.

*Sixth.* In the event that a member sued or threatened with suit shall, without the advice or consent of the attorney of the Society, determine to settle or compromise any claim against him, he shall reimburse the Society for the expenses incurred in undertaking his defense, and in default thereof, he shall be deprived of further privileges under this resolution.

Amend Chapter 10 by adding in third line after the words "house of delegates" the following: One dollar per capita which shall be set aside and held by the treasurer of the State Society as a medical defense fund which may be drawn upon by vouchers from the Secretary of the Society after being approved by the Chairman of the Committee on Medical Defense.

Signed, W. R. MILLER,  
F. H. WHEELER,  
E. J. McKNIGHT.

On motion by Dr. Charles A. Tuttle (New Haven) it was voted that the House of Delegates instruct the Secretary to submit to the various members who speak, a proof of their remarks before the remarks are published in the Proceedings.

On motion of Dr. E. J. McKnight (Hartford) it was voted that a rising vote of thanks and deep appreciation be extended to Dr. Samuel M. Garlick for the valuable services rendered the Society as a member of the Committee of Medical Examinations and Medical Education.

Adjourned at 9:55 A. M.

## The Banquet.

The annual banquet was held at the Hotel Stratfield, 1243 Main Street, Bridgeport, on May 18, 1916, at 7.30 P. M. About one hundred and twenty-five members were present. Dr. George B. Cowell of Bridgeport was toastmaster. The following were the speakers:

HON. CLIFFORD B. WILSON, Bridgeport  
HON. HOMER S. CUMMINGS, Stamford  
MR. GEORGE E. HILL, Bridgeport  
DR. WILLIAM H. CARMALT, New Haven  
DR. MAX MAILHOUSE, New Haven  
DR. SAMUEL M. GARLICK, Bridgeport

PRESIDENT'S ADDRESS.



## President's Address.

### *Some Defects and Inconsistencies in Connecticut Statutes and Medico-Legal Procedures.*

MAX MAILHOUSE, M.D., NEW HAVEN.

#### *Members of the Connecticut Medical Society:*

An experience of many years with Defectives and Insane, both in the courts and in public institutions (as well as in private practice), has brought forcibly to my attention conditions existent, which in these days of enlightenment, eugenics and also of fair play, should no longer continue. I refer more particularly to the marriage of epileptics and the disposition by the courts of the criminal, feeble-minded, defective and imbecile classes.

Let us first take up the subject of the epileptic and his marriage. Section 1354 of the 1902 Revision of the General Statutes reads as follows:

*Marriage of Epileptics and Imbeciles:* Every man and woman, either of whom is epileptic, imbecile or feeble minded, who shall intermarry, or live together as husband and wife, when the woman is under forty-five years of age, shall be imprisoned not more than three years. (This statute became effective Aug. 1, 1895, and was, of course, not retroactive.)

SECTION 1355.—*Procuring or aiding such marriage:* Every person who shall advise, aid or abet, cause or assist in procuring the marriage of the persons described in Section 1354, knowing them or either of them to be epileptic, imbecile or feeble minded shall be fined not more than one thousand dollars, or imprisoned not more than five years, or both.

That this law is a dead letter must be acknowledged to be a fact by any one who has been practicing medicine for even a brief period of time. The general practitioner sees it, recognizes the fact and wonders at it. Why the age limit is set at forty-five only those who had to do with the passage of the act might explain (possibly because it was thought that child bearing ceases at forty-five); but in view of the common experience that men-

struation does not cease in many women until the age of fifty or fifty-one, and also because of the fact that children have been born of women who have reached the age of fifty, it might seem best from a eugenic viewpoint to make the minimum age fifty or fifty-one years. Inasmuch as epileptics breed epileptics, imbeciles and defectives of other kinds, the degree of danger to which a community is subjected in these possibilities may be inferred from the facts as shown by the statistics of Spratling, who, from a study of 1,100 cases, gives the incidence of the disease up to and including the age of fourteen as 71 per cent. and from twenty to thirty-four years of age (the marriageable age as it might be called) as 11 per cent. A very striking illustration of the prevalence of epilepsy among those to whom the law would apply can be demonstrated from the statistics gathered by a committee of this society and published in the proceedings of the year 1902; among a total of 357 cases reported upon, there were sixty-eight married, twenty-three widowed and three divorced, a total of ninety-four who had been married, which gives a percentage of over 26. Now, in view of the fact that 71 per cent. of epilepsies begin before the age of fifteen, i. e. before the marrying age, it follows that  $18\frac{1}{2}$  per cent. of these ninety-four persons, or at least seventeen of the 357 epileptics, would have come within the provision of the statute. Furthermore, as it is estimated that there are over 3,000 epileptics in the State, there would be approximately 170 married people liable to the penalties provided in our laws. Now, why were these people permitted to marry? My own experiences lead me to believe that while a few did so with a knowledge of and in spite of the law, the many did so because of ignorance of the law. Inquiries among prosecuting attorneys and registrars of vital statistics reveal the fact that there has never been a prosecution of an epileptic under this act. Nor does the act provide for the annulment of such a marriage, and it is questionable whether such should occur in case a child should be born in such wedlock. It seems to me that before a marriage license is issued by those empowered to do so, and before a marriage ceremony is performed, the contracting parties should both appear before the issuer of the

license and make oath as to the freedom from epilepsy of either party; and also that as a part of the marriage contract, the one uniting in marriage should also require the same preliminary; penalty of annulment as well as of imprisonment being provided in case of perjury. In this way, possibly, might be secured an added preventive of the propagation of defectives and the burdens of and dangers to the state lessened.

Protection to an epileptic claiming a cure could easily be secured by an affidavit duly sworn to by a licensed practitioner, stating that such an individual had been cured of his or her epilepsy.

Before passing on to the larger subject of the criminal defective, I desire to pause for a moment to discuss the inefficiency of equipment of many of those who are called to pass upon cases to be acted upon by Probate Courts for commitment to institutions for the insane. Referring again to Chapter 162 of the Revised Statutes of 1902, we find under Section 2740, title, "Evidence of Insanity," and concerning commitment by Probate Courts, the following: "The court shall require the sworn certificate of at least two reputable physicians, whom it shall find to be graduates of legally organized medical institutions and to have been practitioners of medicine at least three years within this State," etc. Some of us connected with general hospitals feel, in view of certain experiences, that harm has been done in many cases by the fact that patients under observation for a period of time in the institutions and properly diagnosed as insane have, after removal, been declared to be of sound mind by the two physicians appointed by the court; later on the symptoms of insanity have become so plain that commitment followed. Such a state of affairs could be avoided by the examination by the commission of the hospital records and so informing themselves upon the medical history of the case. Nor does it seem fair to the family and friends of the mentally diseased, that they should be twice compelled to pay for the expenses incident to the proceedings, and, more important than this, to run the risk of harm to themselves or to the patient during this period. A period of three years of general practice is insufficient to

enable the average doctor to qualify himself to decide many of these momentous questions. The system in vogue in New York State, which requires certain qualifications of those named Commissioners in Lunacy, who by training and experience are better fitted than the average general practitioner to diagnose and certify to insanity, should be established in this State; according to this law, none but Commissioners in Lunacy may certify to the insanity of a person.

Let us now take up the matter of the disposition by the courts, of the criminal, feeble-minded, defective and imbecile classes. It has been my own experience, and that of other alienists and neurologists in this State, that individuals of this class have been unjustly discriminated against in the administration of justice. As a preliminary to the discussion, permit me to quote from the statute its definition of the insane. Section 2735 of Chapter 162 reads as follows: "‘Insane person’ means and shall include every idiot, *non compos*, lunatic, insane and distracted person"; in other words, under the heading of "Humane and Reformatory Institutions," the above mentioned are all considered as on a par. Now, you are all familiar with the practice of the courts concerning the disposition of the criminal insane, those whom we medically call insane as distinguished from the idiots and imbeciles. A few illustrations will make this clear.

At the close of a trial of a man accused of assault with intent to murder, the jury found the accused "Not guilty, on the ground of insanity"; the court sentenced the man to the Middletown State Hospital for the Insane. In another case of an accused charged with assault with intent to kill, after my own testimony (as an expert called by the State) that the man was not responsible, that he was seized with an insane impulse in the course of an insanity of a paranoid type, the judge instructed the jury to bring in a verdict of not guilty on the ground of insanity, and, the verdict having been rendered in accordance therewith, this accused was also sentenced to the same institution; in a third case two physicians as experts for the State having testified as to the insanity of the accused at the time of the commission of the crime, the same course was taken.

The cases can be multiplied without number; and the course pursued has been and is the customary one, and, as we all know, the proper one. The point which I desire to make is that these individuals were or had been within a short time preceding the commission of the crime, of normal mentality or, better said, of normal mental development; they had been endowed and developed with all the mental faculties, and from various influences, hereditary, environment, etc., had become mentally diseased. The contrast which I desire to make is one with the defective class, those who had never been fully developed mentally, who had been handicapped from birth or early life and who had grown up physically but had lagged behind mentally from various causes. What are the medico-legal results with this class? A few personal experiences will best illustrate.

CASE A. This young man was arrested for attempted arson and tried before a jury in the Superior Court. The only medical testimony introduced, and that by the State's Attorney, was to the effect that this young man was an imbecile, that he was irresponsible. The court instructed the jury to return a verdict of not guilty on the ground of insanity. This having been done, the jury was discharged; then the court was in a quandary as to what disposition to make of the man. If the case had been one of insanity, as we classify it, there is no doubt but that he would have been sent to the Norwich or Middletown asylum. After some deliberation the court finally decided to send him to the State's Prison, remarking that in either event the public would be protected, and that in so far as the accused was concerned, owing to his mental defect, it would matter little as to where he were confined. The sequel is contained in the subsequent history of the case, namely: "Sentenced to the State's Prison for a term of one to five years, ——." He served the maximum term, and a few days previous to his discharge he was transferred to the insane ward, and when released was taken to the Connecticut Hospital for the Insane at Middletown by the Connecticut Prison Association, after having been committed by the Probate Court. Now, after more than two years of his existence at Middletown, the superintendent says that his mental

deterioration is more pronounced, his psychosis having been diagnosed as dementia præcox on the basis of imbecility. In all fairness to the family of the accused, he should have been sent to the asylum as a patient and not to State's Prison as a criminal; furthermore, it must have been known to the prison officials very soon after his commitment that ultimately he was going to Middletown, and steps should have been taken at an early date to send him there, rather than wait until the expiration of his sentence.

CASE B. Young man, aged 21, indicted for arson, and pleading guilty before the court. The only testimony presented and introduced by the defense was to the effect that the accused was defective, a high-grade imbecile, and having the mentality of a child of ten, as estimated by the Binet-Simon tests. Among other symptoms he gave evidence of defect of judgment. Two alienists for the defense testified as to his mental condition; none were called by the State. The same discussion, as occurred in Case A, arose as to the disposition of this young man. The State's Attorney, on the basis of the accused having the capacity to harbor revenge for real or fancied grievances against the owner of the burned barn, and also claiming that the accused was always mentally deficient yet perfectly sane, urged upon the court to send him either to State's Prison or the Reformatory. The court, in doubt as to whether the accused could be committed to the Institution for Feeble-Minded at Lakeville, said: "I should like to think about it. It is not an easy situation"; also "consistently with the interests of the public, we want to do what is best for the boy." Finally, after adjourning the court from Friday until the following Tuesday, the accused was at the latter date committed to the Reformatory for ten years. It should be stated that in this case there was some discussion as to whether the court had jurisdiction to commit the accused to the Lakeville institute, but it finally appeared that it had no such power.

CASE C. Some ten years ago, a young man indicted for the murder of the wife of a farmer by whom he was employed, was examined by two alienists sent to the county jail for that purpose by the State's Attorney for that county. They reported back to the attorney that the man was an imbecile and irresponsible.

Experts for the defense had also come to the same conclusion. The State's Attorney was displeased with the report of his own experts and expressed himself before them to the effect that there had been so many crimes committed in that county during the past few years that it was time it was stopped and some one had to be made an example of. Before the case came to trial it was agreed between the attorneys for the defense and State that a plea of guilty in the second degree be entered and accepted. This was done, the accused sentenced to State's Prison for life, and he is still there. These cases could also be multiplied *ad infinitum*.

Look at the contrasts here in the administration of justice. If you are born defective and grow up to the age of twenty-one, with a fine physique but a mentality of a child of ten, you are held responsible for arson or murder or whatever the crime may be and sent to prison; but if you grow up to the age of twenty-one deformed in body but mentally fully endowed and then become insane and commit a crime, you are considered mentally diseased and sent to a hospital for the insane. A distinction is drawn between the man who never had a fully developed mind and the one with mind fully developed but later become diseased; and yet according to the statute hereinbefore quoted both come under the definition of insane person. Isn't it time that such conditions should cease?

A man was arrested for attempted burglary. He was seen to attempt to enter one place and was warned away by a neighbor, but still persisted; he failed to enter; was later arrested and placed in jail; later on he appeared to have no recollection of all that had taken place; it also appeared that shortly before his attempt to burglarize, he had had an epileptic fit and had been attended by a physician. It was held by an expert called by the State that the subsequent acts were post-epileptic automatisms and that he was irresponsible. The court accepted this view of the case and the accused was sent to Middetown. This man was a defective, sane in the interval, insane at the time of the commission of the crime, a case that might properly fit in between the two groups which we have been discussing.

What is to be done in these cases? How can justice best be secured, and what procedures might be of more advantage both to the State and to the accused?

The answer can be found by a study of the methods in vogue in most of the New England States and notably in Massachusetts. This has been most ably set forth in a paper read at the meeting of the American Neurological Association, May 7, 1915, by Henry R. Stedman, M.D., of Boston, and entitled, "Operation of Massachusetts' Laws for Hospital Observation in Cases of Alleged Mental Disease and Defect." Much of what I still have to say has been gleaned from this paper. In his own state, there has been in operation for a period of eleven years, hospital observation of alleged insane.

In Massachusetts, "the special law," governing criminal cases only, provides that not only persons under indictment for any crime, but those under complaint as well, who are at the time appointed for trial or sentence or at any time prior thereto found by the court to be in such mental condition that their commitment to a hospital for the insane is necessary for their proper care or observation, pending the determination of their insanity, may be committed by the court to such a hospital under such limitations as it may order. The court may, in its discretion, employ one or more experts on mental disease, qualified as specifically provided, to examine the defendant, and a copy of the medical certificate and of the complaint or indictment must be delivered to the superintendent of the hospital. By this provision, the lower courts are given authority in their discretion to investigate the mental condition of persons who are brought before them, with the result that in numbers of minor cases, persons charged with crime or misdemeanor have been found by expert examination and hospital observation to be subjects of mental disease or defect, patients who formerly would have been dealt with simply as criminals.

Under the Maine statutes, when a person indicted for an offense or committed to jail on a criminal charge makes a plea of insanity, the justice of the court before which the case is to be tried may order him to be sent to one of the hospitals for the

insane for observation and report by the superintendent of the hospital.

The Vermont observation law is similar and applies only to the alleged criminal insane. It authorizes persons indicted for offenses or committed to jail on a charge thereof whose plea is insanity to be ordered into the custody of the Vermont State Hospital for the Insane, to be there observed and detained until further order of the judge, so that the truth or falsity of such plea may be ascertained.

By the New Hampshire law, also, when a person is indicted for any offense or committed to jail on a criminal charge to await the action of the grand jury, any justice of the court before whom he is tried may, on the plea of insanity, put such a person into the care and custody of the superintendent of the state hospital, to be detained and observed by him until further order of the court.

That the measure is growing in favor with lawyers and legislators is further evidenced by the enactment of a statute by the Virginia legislature at its last session (1914) providing that the trial judge may commit such an accused person to a state hospital for purposes of observation.

Still more encouraging is the incorporation of this provision in the bill to regulate expert testimony, presented by the Committee on Insanity and Criminal Responsibility of the American Institute of Criminal Law and Criminology, a committee composed of prominent leaders of the bar and of four members of the American Neurological Association. Section 3 of the report, which is a model for future bills for hospital observation in criminal cases, is as follows:

Whenever in the trial of a criminal case the existence of mental disease on the part of the accused, either at the time of the trial, or at the time of the commission of the alleged wrongful act, becomes an issue in the case, the judge of the court before which the accused is to be tried or is being tried shall commit the accused to a state hospital for the insane, to be detained there for purposes of observation until further order of the court; the court shall direct the superintendent of the hospital to permit all the expert witnesses summoned in the case to have free access to the accused for the purposes of observation. The court may also

direct the chief physician of the hospital to prepare a report regarding the mental condition of the accused. This report may be introduced in evidence at the trial under the oath of said chief physician who may be cross-examined, regarding the report, by counsel for both sides.

Had this model been in operation in this State six years ago, the state would have been saved the enormous expense entailed upon a six weeks' trial of one of the cases cited above; the accused would still have to his credit a modest fortune which was consumed in his defense, and he himself would, when indicted, have been placed where he now is and where a period of observation extending over six months was necessary in order to determine his insanity.

It is in such cases as this that the inefficacy of examinations in jails and prisons becomes apparent. If to this be added the fact that counsel for the accused, as is often done, advises his client (a paranoic for example) who may conceal his delusions, that he should not talk when interrogated by alienists sent by the State's Attorney, and furthermore that nocturnal observation of the accused is out of the question, the advantages of hospital detention and observation must become apparent to all. It certainly would save expense to the State and make retrials less frequent. It might also diminish the number of insanity pleas.

What has been said concerning hospital observation of the alleged criminal insane should, of course, be made to apply to the mentally defective; and the definition of an insane person quoted in the early part of this paper should in the operations of the courts be made to cover this class. The procedure would shift the burden of determining the degree of mental capacity and criminal responsibility to those best fitted for the task, i. e. the heads of the State asylums for the insane, and take it from the shoulders of the courts, where the status of this class seems to be an unknown quantity; for again in the words of the court in a given case—"the first thing is the interests of the public," and, "consistently with those interests we want to do what is best for the boy." Now, if you can combine those two objects, that is what we all want to do. In the humble opinion of the writer, a hospital and not a State's prison would best solve the problem.

SCIENTIFIC PAPERS.



## The Prevention of Blindness in Infancy and Childhood.

EUGENE M. BLAKE, M.D., NEW HAVEN.

The statement of the National Committee for the Prevention of Blindness that half of all the blindness in the world is preventable, is a conservative one. If we rule out the causes which are most active after the age of childhood, such as occupational injuries, complications of pregnancy, glaucoma, syphilis, diabetes, etc., we may safely say that 75 per cent of the blindness which occurs during childhood might be avoided.

In using the word blindness I would ask you to take it as meaning greatly impaired vision and not necessarily entire lack of sight. There are diseases which frequently result in such decrease of visual power as to greatly handicap the child in the pursuit of an education and in adult life of a profitable vocation, without producing complete blindness. Figures do not accurately represent the value to the individual of his visual power. For instance, a person with only 25 per cent of normal sight may be a brilliant scholar or successful business man, and his advantage over the individual totally blind is infinitely greater than any percentage figures could possibly represent. Nevertheless, the child who must go through life with vision much reduced by scars in the pupillary areas of the cornea labors under a serious disadvantage. It is to these children, as well as to the one destined for an institution for the blind, that we must lend our sympathy and skill.

One of the most potent causes of blindness is ophthalmia neonatorum. There is little new in a scientific way to be said of this dread condition and I need not invoke your pity for the innocent victims of this disease. A word may profitably be said of ophthalmia neonatorum from an economic standpoint. I have been unable to get reliable statistics for the State of Connecticut, but figures are available for other states and countries

than our own. There are no accurate data regarding the prevalence of ophthalmia neonatorum but we can obtain a very fair idea by studying the admissions to schools for the blind. In the United States, during the past eight years, the proportions of entrants from this cause has varied from 26.5 per cent to 15.1 per cent, an average of 21.5 per cent. Writing in 1907, Mr. Bishop Harman, an English ophthalmologist, stated that 36.36 per cent of the pupils in the London schools for the blind were there as a result of ophthalmia neonatorum. Dr. Lucien Howe of Buffalo, a leader in the prevention of blindness work, estimates that 32 per cent of the blind owe their sad condition to this disease.

The last government census shows at the least 100,000 blind people in the United States. If we adopt the conservative figure of 20 per cent blinded by the disease under consideration, we have 20,000 victims of this preventable affection. It has been estimated that the cost to the state to educate and maintain for life one blind person is \$10,000. This means an expenditure of twenty millions of dollars for this purpose. The State of Pennsylvania appropriates yearly the sum of \$2.35 per capita for the education of a public school pupil, while the apportionment to the state schools for the blind amounts to \$305.00 per child. Therefore, Pennsylvania can educate 129 seeing children for every blind child.

Now there is only one known way by which to control the incidence of ophthalmia neonatorum and lessen the blindness which accompanies it so frequently, and that is by legislation. Our own state is far behind many others in this respect. We have had since 1895, a statute on our books which makes ophthalmia neonatorum a reportable disease, but since the law is never enforced, it is, so far as tangible good is concerned, practically non-existent. The State Board of Health says that so far as is known it has never been followed or enforced.

Section 2535 of the Connecticut Statutes reads as follows:

INFANTS HAVING DISEASED EYES TO BE REPORTED. Should one or both eyes of an infant become inflamed or swollen, or reddened at any time within two weeks after its birth, the midwife, nurse, or attendant having

charge of such infant shall report in writing, within six hours, to the local health officer or board of health, of the city, town or borough in which the parents of the infant reside, the fact that such inflammation, swelling, or redness of the eyes exists. Every person violating the provisions of this section shall be fined not more than \$200.00.

Connecticut has the honor of being the sixth state to pass such an act relating to ophthalmia neonatorum, and so far as it goes, it is a good law. There are, however, several details upon which it does not touch which would make it a greater force for good. And since it is not enforced it amounts to little more than a good intention never fulfilled.

The health officer of New Haven, Dr. Wright, has kindly written to the National Committee for the Prevention of Blindness, asking which state law they consider most practical and efficacious. As the members of this Committee are well-known ophthalmologists, obstetricians, lawyers, business men, etc., we may well regard their opinions highly. It is the view of this body that the Ohio law is the best of all such enactments. This law provides that institutions and midwives shall use a prophylactic. Physician, midwife, nurse, institution, etc., shall report the fact of inflammation of the eyes within six hours, to local health officer. The latter to follow up all such cases and report them to the State Board of Health. The State Board to enforce the law, make rules, distribute prophylactic outfits gratuitously, provide treatment if necessary, supply a copy of the law to physicians and midwives, keep a record of all cases, report all violations to the State Board of Medical Registration and to the local police or county prosecutor. Appropriation of \$5,000.00 to carry out the provisions of the act. Penalty, \$50.00 to \$300.00.

To this Ohio law might well be added two other provisions, namely, a question on the birth certificate as to whether a prophylactic has been used, and also some arrangement for the hospital or dispensary treatment of babies' sore eyes.

To ascertain how far provisions exist in the various states, the New York Committee has made a study of those state laws and regulations which relate to the control of ophthalmia neonatorum. The following tabulation is correct to January 15, 1915:

The reporting of babies' sore eyes to a physician or local health officer is compulsory in .....	30	states
The reporting law is printed on the birth certificate in .....	5	"
Local health officers are authorized and required to secure medical attention for uncared-for cases in .....	11	"
Births are reported early enough to be of assistance in prevention of blindness work in .....	4	"
The question as to whether or not precautions were taken against ophthalmia neonatorum is included on the birth certificate in .....	9	"
Free prophylactic outfits are distributed to physicians and midwives in .....	12	"
The use of a prophylactic as a routine is compulsory in .....	6	"

Barring the compulsory use of a prophylactic by physicians, each of these items should form a part of the law covering this subject and it is the belief of the writer that within a few years all states will have such a statute.

The Ohio law is practically the same as that which has been in force in Massachusetts since 1910 and we may enquire how well it has worked out. As it was felt that cases were not being reported regularly, four notices calling attention to the law were sent out to physicians (and should have been sent to institutions and midwives). These notices failing to attain the desired effect, a test case was brought up by the Boston Board of Health. The case was not a particularly severe one and the child did not become blind, but the physician was convicted for failing to report the case, and this decision was upheld by the Superior Court. The month preceding the conviction there were ten cases reported; the month following the conviction there were twenty. There being no prosecutions the succeeding month, the number fell back to ten. Further prosecutions were made and in the next four months there were reported respectively, fifteen, thirty-two, ninety-seven, and a hundred and sixteen cases.

Following the arrest of a midwife in Cleveland, for failure to report a case of ophthalmia neonatorum, eight others were reported within two weeks and all of the eyes were saved.

The object of such legislation is to secure early reporting and prompt treatment.

From 60 to 65 per cent of cases of ophthalmia neonatorum are due to an infection by the gonococcus. In the other 35 to 40 per cent, a variety of organisms is found. It is the former and larger group which leads so often to damage to the eyes. It would seem highly desirable, but perhaps somewhat difficult of application, to enforce the compulsory treatment more particularly in needy cases of the gonorrheal type. It is a matter of but a few moments time and requires no elaborate technique to make a Gram stain. If a Gram-negative, intra-cellular diplococcus is found, the chances are great that we are dealing with the gonococcus. There are only two other organisms having these staining peculiarities, the meningococcus and the micrococcus catarrhalis. As the former is practically never found and the latter but rarely in cases of ophthalmia neonatorum, there is little difficulty in identifying the gonococcus by a smear examination.

To enforce compulsory hospital treatment of the milder type of case would mean an unnecessary burden upon the state treasury, provided that home treatment at all satisfactory could be carried out. But to be able to take a severe case of gonorrheal ophthalmia neonatorum, even against the wishes of ignorant parents, to a hospital, would mean the saving of many an eye, as it is in just these cases that proper care is not given at home.

There has been instituted in Boston, through the Social Service workers, what is known as a "follow-up" system. Through this agency proper treatment has been given in the homes, or the baby transferred to a suitable institution. Since this system has been inaugurated not a single case has resulted in blindness. This method has recently been introduced into New Haven Hospital and promises to be productive of great good.

As Dr. Howe says, "probably we would all agree in considering guidance better than coercion when dealing with physicians individually, with the profession as a whole, or with the public. But we would also agree that coercion is also necessary now and always in compelling nurses and midwives to report any symptoms of the ophthalmia of infancy, as soon as practicable

after they develop. Then the all-important thing is promptness. This is as necessary as an alarm of fire. Moreover the surest way to secure that alarm is not by waiting to educate 'the midwife, nurse or other person having charge of said child,' but to have the strong arm of the law reach out to that person, whoever he may be, who trifles with the sight of an infant. The fear of arrest alone does more towards education of the midwives and nurses than any other single effort."

The writer feels confident that he voices the sentiment of the physicians of Connecticut, and especially of the ophthalmologists, in expressing the hope that during the coming session of the legislature, it may be possible to have enacted an amendment to the statute which shall cover the points mentioned and deal effectively with the control of ophthalmia neonatorum.

The eye disease which ranks second as a cause of reduction of vision in childhood is the so-called phlyctenular ulceration of the cornea, sometimes spoken of as eczematous keratitis. The word phlyctenule is derived from the Greek phlyktaina, a bladder, referring to the vesicle-formation which precedes the state of ulceration. The old term of scrofulous keratitis has been relegated to the scrapheap of medical nomenclature. Nevertheless, it presents to the mind of the physician, the typical case of what not so many years ago was called scrofula—the child with pale skin, enlarged tonsils and adenoids, dry, brittle hair, scaly lids and sore eyes. Rarely resulting in complete blindness, it very frequently leads to great impairment of vision and is, therefore, worthy of our attention. It occasionally causes perforation of the cornea and a lost eye, but more often leads to the production of one or more opacities of the cornea which persist throughout life. Phlyctenular keratitis is a very common ocular disease of childhood, especially among the poorer classes. In dispensary practice it is not only a daily occurrence but an ever-present evil to be combated vigorously and persistently.

The old term of scrofulous keratitis had this to be said in its favor, it conveyed to the medical mind the fact that the eye disease was only a part of a general discrasea, whereas the more accurate name of phlyectulosis seems to set it apart, as a thing

to be treated by one especially skilled in a particular branch of medicine. The little excrescence which appears on the conjunctive or cornea and soon breaks down, forming an ulcer, is only an expression of a profound disturbance of the entire physical economy. Many competent observers assert that the phlyctenule is always an evidence of tuberculosis in some part of the body. It is not in itself a tuberculous process, for the staphylococcus is found uniformly in the little vesicle; nor has the disease focus the histological characteristics of a tubercle. These observers explain the ocular change as a staphylococcus invasion of the epithelial layer of the eye, whose resistance has been lowered by the circulation of a tuberculous toxin. The fact that over 90 per cent of the children react positively to tuberculin or a Von Pirquet test is not proof that the disease is itself tuberculous in nature.

On the other hand, there are equally good clinicians who attribute the phlyctenule to a disturbance of metabolism arising from the alimentary tract. The writer is of the opinion that most of these children suffering from phlyctenulosis are tuberculous, but the evidence is not convincing that some cases do not arise from dietetic errors.

In considering the treatment, the point to be borne in mind is that we have not done all we should do for our little patients if we stop with the local treatment to the eye. Besides the use of atropine, fomentations, antiseptic agents like yellow oxide of mercury, or best of all, finely powdered boric acid dusted into the conjunctival sac, we must give attention to the general health. It will often be found that these patients eat a great deal of cake and candy, and are given tea and coffee to drink. The withdrawal of these articles and the substitution of milk and eggs is an aid in the cure and in the prevention of further attacks. Intestinal antiseptics, such as 1/10 gr. calomel given several times a day for a few weeks, act favorably, as do outdoor life and tonics. Certainly in stubborn or recurrent cases tuberculin should be given. A. E. Davis, of New York, feels that tuberculin will prevent recurrences; while Derby, of Boston, an authority, says that whether or not phlyctenulosis means

tuberculosis, it is best treated with tuberculin. We have here, then, a condition where coöperation between the ophthalmologist and the family physician or pediatricist is essential.

The third disease leading often to partial or complete blindness in one or both eyes is trachoma. Fortunately for us there is not a great deal of trachoma among the school children of Connecticut. Owing to the careful school inspection the cases are usually quickly detected and promptly treated. But in other sections of the country, notably in Kentucky, Tennessee and the Virginias, trachoma is very prevalent and presents a real problem to the profession and to the state. It is stated by government inspectors that 90 per cent of the Indians of certain tribes suffer from this disease. In the south and west there have recently been established several hospitals for the treatment of this disease alone. The operation of squeezing out the trachoma granules followed by the systematic use of copper sulphate or silver nitrate gives good results. The secret of success is the early detection of the disease and persistent treatment.

An occasional cause of injury to the eye is the breaking of a spectacle lens with penetration of the globe by one or several fragments of glass. The accident happens most often to boys through the throwing of stones, snowballs, and other missiles. While this risk of injury by means of broken glass must be endured where glasses are needed, it should be remembered as a possibility and weigh against the habit of prescribing weak lenses for an occasional headache or other possibly remote symptoms in childhood. While there are many little ones whose vision and health would be improved by correcting lenses, there are undoubtedly many others of the youthful population fitted to glasses who would be quite as well off without them.

Finally, a word concerning another type of eye injury, reported only within the last few years. Golf balls of European make frequently contain a core of strong caustic, intended to add resiliency to the ball. Inquisitive Young America is very apt to attempt to get at the heart of things and if it be a golf ball which engages his attention he may suffer severe and painful burns in his too ardent pursuit of information. The caustic

liquid, usually a strong alkali, is under considerable pressure, and if the ball is cut open some of the fluid may spurt into the eye with disastrous results. A growing number of such accidents is being reported and we would do well to spread the knowledge of this danger wherever discarded golf balls are given to children for their amusement.

If we, as physicians, would add to the happiness and efficiency of man, we must begin in early life to prevent those diseases and accidents which leave behind irradicable scars. And no one will question that two healthy eyes, to behold the wonders of Nature, are necessary to happiness and progress. Therefore let us undertake the conservation of the eyes while they are yet healthy and not confine our energies to the combating of established disease.

#### DISCUSSION.

DR. HENRY S. MILES (Bridgeport): It is certainly a most excellent thing, I think, for us to bring to the attention of the profession and public, from time to time, these preventable disorders and diseases and the modes that are used for their prevention. This has been done most thoroughly by Dr. Blake, in the paper that we have listened to.

Among the suggestions which he makes for the improvement of our present law is one that copies should be sent to physicians and midwives. I think we should include judges in the list of recipients. I had to do some eighteen years ago with the arrest of a midwife who had neglected to report a case of ophthalmia neonatorum. It was a severe case with ulceration of the cornea. She was arrested; the case was tried; at the conclusion the judge blandly said, "Well, a great many babies have sore eyes; my own child had the same thing and got along alright," and he discharged her. Well, I had seen his child and it did get along alright, but he couldn't appreciate the difference between prompt treatment by a physician and the neglect of a midwife. I think there was a midwife arrested in Meriden some time later and she was allowed to go by the judge, so perhaps we were a little discouraged in trying to enforce this law. Of course in addition to the strong arm of the law, as Dr. Blake says, we should, I think, do what we can in the line of education and I have lectured before the nurses of the Bridgeport Hospital Training School on this subject every year since the law was enacted and have read to them the law.

The doctor rightly says that in phlyctenular ulceration the majority of cases show symptoms of tuberculosis, but it is also true that most of

these cases will get well if they have proper food and the correct hygienic surroundings. That is very important. Of course some of them are undoubtedly tuberculous and need the tuberculin also, but it is not always necessary.

My own experience agrees with Dr. Blake regarding trachoma blindness, and children with trachoma are practically unknown in this part of the country. There are one or two other preventable injuries that might at least be mentioned. The shot from air rifles is a source of blindness not infrequently. Of course burns and injuries from fireworks are happily getting less, but they formerly formed a large proportion. Scissors and sharp instruments are sometimes given to children to play with, or they get them, and these cause many cases.

There is another source of blindness that we should ever be on the lookout for, and that is sympathetic ophthalmia,—leaving in an injured eye too long may cause blindness in a fellow eye, and that of course is a very sad thing.

DR. F. M. WILSON (Bridgeport): Dr. Miles didn't tell the second chapter after the arrest of the midwife. One of the midwives sent us word within a week that if we would let up on them they would never do it again, so that we did really accomplish something by having her arrested, although it is not very encouraging to be ruled out of court as we were.

DR. F. W. WRIGHT (New Haven): I presume as a health officer I have more occasion to see the need of some official action in treating cases of ophthalmia neonatorum than the general practitioner. In New Haven it has been no inconsiderable expense to care for neglected eyes which, if they had been reported early, would have been saved with very little expense. I feel very much interested. I have taken this matter up with the ophthalmologists of New Haven within a few months hoping that there will be some legislative action taken this year to make a law that is adequate for our needs.

DR. BLAKE: Only one word, to say that what Dr. Miles said about failure to keep one's case in court has been the usual experience. The law in New York was a very good one but physicians found that they could get no prosecutions, the prosecuting attorneys would not prosecute when cases were brought to their attention, until the Society for Prevention of Cruelty to Children became interested and secured their own lawyer and saw that action was taken on these cases. Since then cases have been followed up and prosecutions made regularly, but everybody's business seems to be nobody's business and these things usually go by default.

## What Attitude Should the Physician Take Towards Health Insurance?

GEORGE BLUMER, M.D., NEW HAVEN.

The eradication of disease is far from being entirely a medical problem. The sociologic and economic aspects of preventive and curative medicine are of the greatest importance, and the increasingly widespread practical recognition of this fact has been one of the most significant phenomena of recent years. The development of the medical inspection of schools, district nursing, social service in hospitals and dispensaries, infant welfare societies, prenatal training and care, and other activities of a like nature testify to the awakening of the public and the profession to an appreciation of the importance of the social aspects of disease.

The medical profession has long been cognizant of certain economic aspects of disease. It has for centuries been a notorious fact that physicians practicing among the poorer classes have frequently had to contribute their services without compensation. No one knows better than the medical profession that among the poorer classes in large cities many families are living so close to the border line between sufficiency and starvation that a doctor's bill is little less than a calamity. It is perhaps not sufficiently realized that in spite of the large amount of charity work which is done by the medical profession both within and without the free dispensaries and hospitals, in perhaps forty per cent of their ailments the poorer classes fail to consult a physician at all. Further than this, the relationship of such economic problems as insufficiency of food, over-indulgence in alcohol, harmful occupations, and insanitary home surroundings, all have a distinct bearing upon the development of, and the resistance to, a great variety of diseases.

The past century has seen extraordinary developments in the science and practice of hygiene and sanitation. These develop-

ments have so far been mainly along the lines of communal hygiene. They have resulted, as is well known, in a considerable reduction in the mortality from certain groups of diseases, particularly the infectious diseases, and have produced a very definite and striking prolongation of the average duration of life. While it cannot be truthfully said that the development of communal hygiene is equally advanced among all civilized nations, it can be quite definitely stated that evidence is accumulating that something more than communal hygiene will be needed in order to eradicate certain prevalent diseases. To cite only one instance, the somewhat alarming increase in the United States in the so-called degenerative diseases, which we now regard as very largely due to errors in individual hygiene, makes it clear that preventive medicine must in the future take much closer cognizance of the individual.

The science of Medicine, and consequently the practice of Medicine, is becoming more and more complicated. The development of the use of physical agents like radium and the X-rays, the growth of physiological and clinical chemistry, the more exact application of dietetic principles, and the tremendous strides which have been made by the science of Immunology, have together so complicated the problems of diagnosis and of treatment that the details are already far beyond the grasp of any one man. It is still possible, and will probably always be possible, for the well-trained general practitioner to recognize many common and typical manifestations of disease, but the more complicated and obscure conditions can no longer be diagnosed by the naked senses. There can be no question that we are already facing a situation which can only be satisfactorily met by means of medical coöperation. To-day in many of the better hospitals and clinics the diagnosis and treatment of disease by medical groups rather than by medical individuals is an established procedure. It is hardly necessary to point out, too, that even in certain diseases easily recognized, such as the common heart diseases, the various forms of nephritis, diabetes mellitus, and many others, problems arise which can only be properly solved by the use of expensive apparatus or by compli-

cated chemical or immunological reactions, the performance and interpretation of which are beyond the reach of the average practitioner and demand the resources of organized institutions with their staffs of trained specialists.

In the preceding paragraphs I have endeavored to outline the more or less unrelated groups of facts which have a bearing on the medical aspects of health insurance. It is clear that no system of health insurance can be satisfactory from the medical point of view which does not provide for the investigation of the sociologic aspects of disease. It is equally clear that the economic status of those affected by the suggested law must be improved, and there is evidence from other countries that such laws actually accomplish this result. It is obvious that no plan can be satisfactory which does not take account of the present trend of medical thought and practice. The Act should provide for the periodic examination of the supposedly healthy as well as for the adequate care of the sick, and any scheme which fails to provide for the examination and treatment of selected patients by coöperative groups of specialists will not achieve the best results.

There is no question that a properly conceived and adequately executed health insurance law will have a decidedly beneficial effect on the health of the community. It will permit many who are now unable to afford medical treatment to receive it; it will encourage the consultation of the physician in the earliest stages of disease; and it should allow of the periodic examination of the supposedly healthy and the widespread education of the public in the laws of health. If this be granted, it goes without saying that the medical profession cannot but heartily approve of the widespread introduction of health insurance.

It is impossible, in a brief discussion, to give details regarding the many matters which must be decided by the profession should a health insurance bill become a law. Lewinski-Corwin in his interesting article enumerates over thirty questions of importance which must be discussed. Such matters as the free choice of physicians, the right of insurance physicians to refuse patients, the method of appointing insurance doctors, the procedure in

cases of doubtful diagnosis, standards of judging invalidity, the basis of compensation to physicians, and a host of other details may be mentioned to give some idea of the complexity of the subject. It is hoped that the representatives of this Society will agree to the perpetuation of a Committee on Health Insurance, with power to confer with the members of the Society through questionnaires and similar methods, in order to obtain the consensus of opinion on these moot points.

An abundant literature, covering the experiences of the profession in other countries, is at the disposal of the Committee on Health Insurance, and there will be little difficulty in gathering information from this literature as to the points which have been most productive of disagreement between the profession and the insurance authorities in other countries.

It is possible to briefly summarize the main features of the proposed Health Insurance Act and to call attention to some of its deficiencies. The Act in question has been prepared by the Committee on Social Insurance of the American Association for Labor Legislation,\* on which were two well-known physicians, Dr. Alexander Lambert and Dr. S. S. Goldwater.

The Act proposes to make health insurance compulsory on all those employed at manual labor whose income does not exceed \$100 per month. It provides the funds necessary to accomplish its aims through joint contributions from the employer ( $\frac{2}{5}$ ), the employee ( $\frac{2}{5}$ ), and the State ( $\frac{1}{5}$ ). It allows existing benefit societies and other organized bodies of workers to act as administrative intermediaries under official recognition. It calls for a system of contracts between the representatives of the insured and the representatives of the medical profession, and allows similar contracts to be made with hospitals. It places the supervision of the administration of the Act under control of a Social Insurance Commission appointed by the Governor with consent and advice of the Senate, and a Social Insurance Council of six employers and six employees.

\* Copies of the Act can be procured from Mr. John B. Andrews, Secretary, 131 East 23d Street, New York City.

The following criticisms of the Act appear valid from the point of view of the medical profession:

1. It makes no provision for periodic medical examination of the supposedly well. There would seem to be no adequate reason why this should not be permitted and perhaps encouraged by a reduction in the premiums of those adopting the plan.

2. It does not specifically provide for dental service, unless it be interpreted that this comes under the heading of surgical service. In view of the accumulating evidence of the close relationship between diseases of the teeth and a variety of general and local diseases, this would seem to be a deficiency.

3. It does not provide for coöperation between the health insurance organization and the existing health organizations of an official or semi-official character. It would seem, *a priori*, that the maximum efficiency of the plan could only be secured by coöperation with the State and local Boards of Health, the local Departments of Charities, the State Sanatorium System, and the various societies which have for their aim the prevention and eradication of disease.

4. The plan does not provide for the utilization of existing dispensaries, unless it is assumed that most dispensaries, being departments of hospitals, are included under the word hospital.

5. The Act does not exclude the various irregular practitioners from participation as medical advisers, and in connection with this, no statement is made as to the qualifications and experience of the physicians who may be allowed to contract with the insured.

6. The Act does not give the medical profession representation on the Social Insurance Commission, or on the Social Insurance Council. It would seem that the profession, as one of the chief contracting parties, should certainly have representation upon at least one of these bodies. Such representation should obviate a certain amount of friction and misunderstanding, inasmuch as it would permit of the expression of the medical viewpoint in the deliberations of the Council or Commission.

In conclusion I think that it may be assumed that the widespread adoption of some form of health insurance will probably

occur in the not far distant future, whether the medical profession in general approves of it or not. It seems reasonably certain that the health insurance bill discussed, or a very similar one, will be introduced at the next session of the Connecticut Legislature. The representatives of the medical profession should, therefore, be in a position to discuss the matter intelligently, inasmuch as the passage of such a bill will involve a contractual relationship between the great mass of the medical profession and the great mass of the public. I would point out that in case such a bill should pass, the details of the contract between the representatives of the insured and the representatives of the medical profession are all left to future settlement. From the experiences of the physicians of the German and British Empires, it is certain that the satisfactory working out of the terms of contract will be a difficult matter, offering many opportunities for friction and misunderstanding. The success of the medical profession in the necessary negotiations will, in my opinion, depend mainly on three factors: (1) the solidarity of the profession; (2) the nomination as its representatives of men of wisdom and experience; and (3) a clear-cut idea of the principles for which we must contend. At the present time a considerable percentage of the organized profession in Connecticut are not members of the State Societies, and I would urge that in the coming year every effort should be made to increase our membership so that in case a health insurance bill is passed, we may present a united front. It is desirable, too, that inasmuch as the bill will not discriminate between the different schools of regularly licensed physicians we communicate with our homeopathic and eclectic brethren and call their attention to the necessity for being prepared to meet the issue should it arise.

#### DISCUSSION.

DR. D. CHESTER BROWN (Danbury): Gentlemen, I find nothing in Dr. Blumer's paper to which I would wish to take exception. I admire his judgment in keeping to the abstract question, "Do we believe in health insurance?" To this we can give an unqualified assent. We all believe in health insurance for ourselves, we believe in it for the public, the wage earners whose incomes are way below what we are in the habit of

thinking. Statistics of the immigration commission show that nearly one-half of our native born population families earn less than \$750 a year. Two-thirds of the foreign born earned less than that, and then the statistics go on to show that a great proportion earn less than \$500. And how can these people support their families and be in a position to support their physician? Therefore it seems to me that we can all, as Dr. Blumer in the middle of his paper states, give an unqualified assent to this proposition that we do believe in health insurance.

It is not the question in the abstract that we have any lack of assent; it is in the application of the idea that we get into a maze of difficulties. We see the differences in the conditions of the rural and the manufacturing districts. We see the tendency of the insured to claim sick benefits on flimsy grounds. We know from reports of fraternal benevolent organizations that they find their interests are conserved only when they have their own appointive, possibly their contract, physician. We see the threatened fight for low rate for professional services, and cheap services rendered for cheap pay, threatening the beneficiaries of the bill.

By these and many other problems we lose the large view of the question, the prophylaxis of disease. You will note that Dr. Blumer has made some criticisms of the bills which appear, and these criticisms appear just. There are still others which would occur to you in studying them. Any bill that would come before a state legislature would have to be individualized to the needs of that particular state. I heartily endorse the idea of the committee of the American Medical Association appointed to draft a model bill be continued, and I would go still further a step and suggest that each state medical society should have a committee to assist in formulating a bill suitable for its own state and to inform its membership relative to its operation. This question is one of our election. It is before us; it is what we will do with it. We are bound to meet it, it is coming before all of our different legislatures, and this bureau that has undertaken the presentation of this question to the public is one that has succeeded in other questions and it is going to succeed in this. The question before us is how are we going to stand with it, what are we going to do to make it advantageous for the public and suitable for us to accept? At a proper time I will have a motion that I would like to present to the society in reference to action to be taken upon Dr. Blumer's paper.

THE PRESIDENT: This matter is now before you for general discussion. Will any one remark upon the subject?

DR. CHARLES N. HASKELL (Bridgeport): During the discussion and reading of the paper I had occasion to enquire of several of my neighbors in this vicinity the difference between health insurance and the

so-called contract work. None of them were able to explain the difference. One man said it was the same thing only in more acceptable form. The contract work which we have expelled members from our society for doing, and which we deny admission to our society for, is in perhaps the same line as the health insurance. Now I am not making this stand as a concrete statement, I am simply asking for information. I must confess to the fact that I didn't get from Dr. Blumer's paper or from Dr. Brown's discussion the difference between the two conditions and I would like to be enlightened on the subject.

DR. GEORGE BLUMER (New Haven): To the gentleman who spoke about contract practice I would simply state that if this act went into effect it practically makes contract physicians out of probably ninety per cent of the profession. The great bulk of the profession who are practicing among individuals whose income is less than \$1,200 a year become contract physicians, only instead of contracting with lodges or similar associations they would be contracting with the state through the lodges. Most of the proposed laws permit the fraternal societies to act as intermediaries and make contracts and permit trade unions to act as intermediaries and make contracts. And the effect of the proposed bill would be to turn the whole profession into a contract profession. There is really no difference between the principle of contract practice and the principle that would go into effect if this bill went through.

## Onanistic Dyspepsia.

LOUIS M. GOMPERTZ, M.D., NEW HAVEN.

It has generally been recognized that reflex neuroses, associated with the sexual apparatus, play an important part in many phenomena of life. The sexual organs of both men and women may involve disorders of widespread diverse organs of the body. Any disease of the nervous system, whether it be functional or organic in character, may provoke pronounced digestive disturbances from which the patient seeks relief. It is incumbent upon the physician to determine the origin of these symptoms. The so-called "gastric neuroses" with a multiplicity of symptoms which have always been classed under the head of functional disorders, must have an underlying cause; and this must be determined specifically before intelligent treatment can be outlined.

I wish to direct attention to a peculiar condition of the digestive apparatus, of which little has been written, for the reason that the ordinary methods of diagnosis have failed to disclose a distinct cause. A corrective or beneficial treatment has accordingly not been possible. Generally the physician is guided by the history of the case, but what can he do when the patient, through a misguided sense of delicacy, withholds the truth? The superficial symptoms of these digestive disturbances even in connection with the patient's history and a painstaking clinical examination do not facilitate the physician's efforts. He is left puzzled at the apparent obscurity of the disorder which he cannot correctly diagnose. He may, on his history card, approximate the cause as nervous dyspepsia, gastric neurosis, aerophagia or something more intangible, well knowing that his diagnosis is only a makeshift and that the symptomatic treatment prescribed will at best yield indifferent results.

The special condition referred to is common enough to engage our earnest attention; and fortunately it is capable of being

diagnosed and relieved provided the patient, by telling the truth, will coöperate with the physician. The symptoms involve reflex digestive disturbances. I venture the opinion, after a great deal of observation, that in many cases these disturbances are directly traceable to the genital organs. It may seem startling to assert that a digestive disorder can be located so remotely, but I am convinced that abnormal sexual intercourse in the guise of interrupted coitus, by producing an inhibition of gastric secretion, is responsible for a number of cases which may be classified under the name of Onanistic Dyspepsia.

Onanism itself has been practiced during centuries of progress and civilization. The designation derives its origin from Onan, mentioned in the Bible. Biblical readers will recall that part of Genesis wherein "Judah said unto Onan, go in unto thy brother's wife and marry her, and raise up seed to thy brother." Evidently Onan was determined to defeat the purpose of the command, although he did not refuse to comply with it, for we read further, "and Onan knew that the seed should not be his, and it came to pass when he went in unto his brother's wife, that he spilled it on the ground, lest that he should give seed to his brother." "And the thing which he did displeased the Lord, wherefore he slew him also."

The modern Onan cannot be punished for his unnatural practice but there cannot be much doubt in the minds of physicians that the Onan of our day does seriously impair his health by frequent indulgence and that he may bring about his untimely death by its persistent continuance.

We may recall that the pneumogastric or tenth nerve has a far-reaching and extensive distribution in that it supplies the pharynx, larynx, lungs, heart and stomach. Experiment has shown that it is possible to produce various visceral sensations by stimulating this nerve. A functional irritation of the vagus may act reflexly upon the stomach, thereby inhibiting the flow of gastric juice. It is therefore not difficult to appreciate that the act of interrupted coitus may incite a nervous reflex capable of producing disturbances which inhibit the gastric flow. These disturbances may be recognized along with various forms of

nervous phenomena all of which are likewise attributable directly to the practice of Onanism.

It is generally believed that, in the gastric crises of locomotor ataxia, there occurs a central irritation of the nuclei of the pneumogastric nerve caused by *organic* disturbances, probably due to the *spirochatae pallida*. Accordingly it is not unreasonable to believe that the gastric symptoms produced by a *functional* disturbance of this nerve may be due to the condition to which I have applied the term Onanistic Dyspepsia.

In the New York Medical Record of June, 1902, Dr. S. J. Meltzer called attention to the fact that the entire alimentary canal is directly under the control of motor and inhibitory agencies and he also emphasized the importance of this inhibition in some of the pathological phenomena of life.

Where there is a functional stimulation of the pneumogastric nerve, sufficient clinical evidence is available to prove that the resulting irritation and inhibitory activity are, largely if not entirely, responsible for various accompanying symptoms of gastro-intestinal disorder. I find it reasonably safe to assign the cases which have come under my observation to the practice of Onanism and I have found that suitable treatment and a return to normal sexual intercourse have produced gratifying results. I will cite but one of many cases as being typical.

A married man thirty-eight years old complained of vague digestive disturbances. His symptoms in the main consisted of pronounced distress a few minutes after eating any kind of food. Eructations of gas were constant and annoying. He stated that he could belch wind at will and that this condition being aggravated by the taking of food, he was almost afraid to eat. His appetite was failing and "heartburn" and sour taste were present. His bowels were alternately constipated and diarrhoeal. Dizziness and headache were so severe that at times he contemplated suicide. Backache was another prominent symptom. In eight years he had lost about ten pounds. His extremities were generally cold, although at times he had flashes of heat. In recent years he had grown extremely irritable, disliked society and yet was afraid to be alone. In his own words

he "didn't know just what he did want." I ascertained that he had been married ten years and during the entire time had practiced Onanism because his wife refused to bear children. The physical examination showed him to be fairly well nourished. His pupils reacted normally to light and accommodation. An examination of his abdomen disclosed a splashing sound and the lower border of the stomach was just below the umbilicus, as was later confirmed by an X-ray examination. His reflexes were somewhat increased. His urine contained a large amount of phosphates but was otherwise negative. The blood examination showed nothing abnormal. Blood pressure 130. Stool after a Schmidt diet showed poor starch digestion. After an Ewald Boas test breakfast, FHCL was absent, and the total acidity reduced. The rennet test, however, gave normal results.

The patient was at once placed under treatment. Although surprised when told that he must stop the practice of Onanism he agreed to do so, and subsequent events showed this to be the fact as his wife was delivered of a fine boy about a year after treatment commenced. He immediately began to gain in weight and the nervous and gastro-intestinal symptoms disappeared. Another examination of his stomach contents, made six months later, gave normal results.

Many cases could be recalled but in the main they would be a repetition of the typical one described. When the diagnosis has been definitely established, the treatment is self-evident. It has been my custom at first to prohibit sexual intercourse for one month, during which time, strontium bromide in one half gram doses is taken by the patient three times daily after meals. I have also prescribed cold sponge baths every morning and, when occasion required it, also tonics consisting of some form of iron or arsenic or whatever may be indicated. Attention to the bowels was mainly relied upon through the aid of diet but when necessary I have given cascara sagrada at bed time.

Briefly I have presented clinical facts which can be readily verified by observation and investigation. In cases of gastric disturbances of obscure origin, accompanied by pronounced nervous symptoms not responding to treatment, the physician

should aim to obtain a more complete history than is ordinarily required. It is particularly important to determine the mode in which these symptoms originate. It has been the common experience of physicians to encounter many gastro-intestinal cases presenting peculiar and mysterious phenomena which cannot be explained. In such cases careful inquiry should be made into the sexual habits of the patients and if the truth elicited indicates the practice of Onanism, timely relief may be afforded the patients and in time it is possible to restore them to the normal habits which insure right living and peace of mind.

### DISCUSSION.

DR. R. A. McDONNELL (New Haven): *Mr. President:* Dr. Gompertz has treated his difficult subject in a frank and convincing manner. His observations are absolutely new, and that this important cause of obscure digestive disturbances should have escaped recognition so long is undoubtedly due to its essentially private and personal character.

Many young men seem rather boastful than ashamed of their illicit sexual experiences, when they consult a physician, and show no hesitancy in relating the details of their amorous exploits. But, from a rather large experience in the treatment of sexual disorders, I am convinced that few married men are willing to discuss, even with their physicians, their sexual relations with their own wives. This being so, the initiative must be taken by the physician, if any real progress is to be expected in clearing up the matter under discussion.

As I look back upon my own experience, I can recall many cases of acne, which I have always believed, and still believe, to be due to intestinal fermentation. But what caused the fermentation? In the light of the paper just read, it occurs to me that in modifying the diet in such cases, and giving proper remedies to control fermentation, I treated symptoms, and, in some cases, at least, overlooked the cause. The shifting eye, the ready flush, the exaggerated reflexes, the proneness to tears, the dread of society, so often encountered in the young subjects of acne, certainly mean a disturbance of nerve balance, and it is entirely within the bounds of possibility that this nerve adjustment is disturbed by pernicious sexual practices.

Persistent acne is not infrequently encountered in young married people of both sexes. It is much more reasonable to suppose that Onanism underlies some of these cases than to believe that masturbation survives the marriage relation. Dr. Gompertz's paper has certainly set me thinking.

On the other hand, I do not believe that we should conclude too hastily that Onanism is alone responsible for much disease, digestive or other-

wise. The practice, when you come to think of it, must be very common, or the average family would be larger than it is. It is probable that many individuals, with no neurotic tendencies, may survive this practice, which is said to be so abhorrent to the Lord, and which certainly is abhorrent to Theodore Roosevelt, for many years, without recognizable penalty.

In conclusion, I wish to congratulate the writer of this paper on having made a distinct contribution to medical knowledge.

DR. CHARLES N. HASKELL (Bridgeport): *Mr. President and Gentlemen:* I am sorry that I do not feel that I can congratulate Dr. Gompertz in making an entity of onanistic dyspepsia. I recognize the condition as one simply of ordinary anxiety neurosis, of which there are very many. I think you all know that onanism is one form of masturbation. I think you all recognize the fact that most all individuals masturbate, both male and female, at some period of life and I think you recognize the fact also that very many individuals do not suffer from dyspepsia. It is perhaps worth little or nothing to go into the discussion of the difference between the sympathetic nervous system and the autonomic nervous system, but it is a matter of fact which Dr. Gompertz has brought out that there is a close relationship between the pneumogastric nerve and the pelvic autonomic system. That we will agree to. But the main point of Dr. Gompertz's paper is summed up in the last three words, "Peace of mind." As soon as you assure the individuals that the practices they are addicted to are not in any way harmful they get better. Dr. Gompertz, in his successes, I feel has established a simple psychological transference which means that he has got the confidence of his patients; they have been pointed out something which they must correct. If instead of instructing his patients that they must complete their sexual acts, which really means nothing to the individual, they are told that the acts which they have been practicing were not harmful in any way, he would have accomplished the same results, in my opinion. The thing that really does the harm, the thing that we really must contend with, is the fact that these people realize that they are frustrating their sexual libids and that they are repressing, and that some individuals do not handle the proposition quite as well as others. Some are quite able to handle it without any disturbance. The majority of doctors possibly. Therefore I must classify Dr. Gompertz's scientific condition as one of many anxiety neuroses.

DR. L. M. GOMPERTZ (New Haven): I am sorry that Dr. Haskell does not agree with me, but if he will carefully investigate cases of gastric disturbances of obscure origin, he will find that a number of them may be traced to Onanism. In reply to the statement, that it is the state of

mind of these patients that causes the trouble; that is not true, as the majority of them when told that they must stop the practice of Onanism, expressed surprise that this habit was injurious. As to the question of diagnosis. The diagnosis of this condition is made in the same manner that any diagnosis is arrived at. The history of the case, laboratory examinations, and exclusion. I believe that Onanistic Dyspepsia is a distinct entity and while it is true that these patients have pronounced nervous symptoms, these symptoms are the result of Onanism. In a large number of cases where the gastric contents have been examined, no FHCL was found. After the diagnosis had been established, and the patients returned to normal sexual life, there was a return of the acid in the stomach and a disappearance of the gastric symptoms. Onanistic Dyspepsia is a distinct entity.

## The Results of Routine Study of the Placenta.

J. MORRIS SLEMONS, M.D., NEW HAVEN.

(From the Department of Obstetrics and Gynecology, Yale Medical School.)

While I was a member of the staff of the University of California Hospital it occurred to me that, if the pediatrician might begin the instruction of his classes in the nursery of the Woman's Clinic, several useful purposes would be served. At first practical difficulties were encountered, but Doctor William P. Lucas, Professor of Pediatrics, and myself were convinced that the principle which gave the pediatrician the opportunity to direct the care of newly-born infants was sound; and we agreed to try the experiment. Our original plans required modification, especially because the care of the lying-in woman and her infant are not independent problems. But, precisely for this reason the obstetrician finds the counsel of his colleague valuable and, conversely, the pediatrician profits by information in the obstetrical history. Wishing to secure the fullest benefits from coöperation we decided to make joint-rounds twice a week and discuss questions relating to the common welfare of the mother and her infant. This arrangement guaranteed the success of our venture.

These consultations taught me that, more fully than I had realized, the course of pregnancy influences postnatal development. The conscientious obstetrician should exhaust every source of information regarding foetal development and should place the facts at the disposal of the physician who will supervise the care of the infant during the early years of its life. If this principle is accepted,—and I do not see how it can be questioned,—the obstetrician will consider it his duty to examine the placenta in more detail than is customary.

Intimately associated with foetal growth, the placenta may present phenomena which will influence the treatment the infant should receive. While such instances are exceptional, and, gen-

erally, the placenta is normal, certain knowledge of the latter fact provides one assurance that extra-uterine existence was not begun with a handicap. On the other hand, if infant-development does not progress as it should the placental examination has unusual value. In the case of prematurely born and stillborn infants as well as when the infant dies within the early weeks of life careful study of the placenta is indispensable to accurate diagnosis.

To-day, even in well-organized clinics the placenta is given slight attention. At the bedside a cursory examination is made to determine whether a portion has been retained; and, perhaps, the organ is weighed but further observations are not made. Sometimes no attention is paid to it. Upon a recent visit to a clinic used for the instruction of students in a Medical School of the first rank, I found the only piece of scientific apparatus owned by the department of Obstetrics and Gynecology was an incinerator placed conveniently to the delivery room so that the placenta might be got rid of as quickly as possible. You will agree, I am sure, that this attitude is not extraordinary.

Obviously, in the hospital laboratory the examination of the placenta will be most thorough, but we have arrived at a period when the practitioner who owns a microscope may make useful observations. And, probably fuller knowledge of the structure and function of this organ will add to its importance in the interpretation of clinical manifestations. Antenatal pathology, as yet poorly endowed with facts, depends for its development in great part upon the solution of placental problems. Even where structural phenomena as infarcts have been satisfactorily explained, their underlying cause, their physiological significance, and their relation to foetal complications have hardly been guessed at. Other rudimentary facts remain obscure, and upon demonstration may radically change our conception of the manner in which the placenta performs its work.

My remarks based upon 600 placentae collected from consecutive deliveries in the University of California Hospital relate to the pathology of the organ. No doubt a greater frequency of unusual cases are encountered in hospital than in private

practice. On that score, objection may be raised to my conclusion that the placenta always deserves careful study. Yet routine is necessary that no abnormality may be overlooked. In my own case when attending patients delivered at their homes, if the placenta had been routinely subjected to careful study, I should not have been without the explanation for a number of foetal deaths.

#### GROSS ANOMALIES.

Multiple Pregnancy (twins) ....	3	Extensive Infarction .....	4
Abnormal Shape of Placenta ...	3	Placental Cysts .....	1
Two Vessels in Cord .....	2	Succinturiate Placenta .....	10
Velamentous Insertion of Cord..	1	Partial Retention Membranes ..	17

In forty-one instances naked eye examination of the placenta revealed abnormalities. Some of them could not have been overlooked, but in a hurried examination others would have escaped attention. Thus, in two cases the presence of a single artery in the umbilical cord was not detected until the specimens reached the laboratory. Clinically, one of the infants presented a number of deformities, and at autopsy only one hypogastric artery was found. Also, in the other case there was a perforated inter-ventricular septum, though the infant lived and gained normally in weight.

In each case of velamentous insertion of the cord a living child was born. A fatal issue, as you know, is not expected from this anomaly unless the foetal vessels pass near the internal os, *vasa previa*, which, though not in this series, I have twice observed. In one case on account of rupture of an umbilical vessel ante-partum hemorrhage occurred. Examination of the placenta demonstrated that the hemorrhage was foetal. In the other case as the head entered the pelvis the placental circulation was blocked; this infant also was stillborn.

Succinturiate lobes were encountered in ten instances; they may be expected in between 1 and 2 per cent of all cases. As they are a well-known cause of bleeding and frequently become infected, the usefulness of determining whether or not the placental tissue has been completely expelled from the uterus, requires no emphasis. Nevertheless, it is pertinent to remark

that in thoroughness the examination at the bedside is not likely to approach that made in the laboratory. And bedside observations are less apt to be recorded; frequently, therefore, a poor memory is depended upon when definite records are needed for the interpretation of puerperal complications.

Portions of the membranes were missing in seventeen instances; six occurred in the first fifty cases. Later the complication was much less common. Usually, too hurried or vigorous conduct of the third stage of labor accounts for this complication. My clinical assistants soon finding that the laboratory checked their work were encouraged to acquire a more perfect technique. To learn how cases are conducted when they cannot be personally supervised I can recommend as one important means, complete placental records.

Another useful observation pertains to the stained microscopic sections. The blood vessels in the chorionic villi often furnish a clue to the time when the cord was tied. If the ligature is not placed until pulsations cease the blood vessels in the villi are relatively empty; on the contrary, if they are congested we may usually assume that the cord was tied earlier than it should have been. Occasionally, I have seen an interne surprised when upon the evidence afforded by the microscope he was fairly accused of being in a great hurry to bring his case to a conclusion. Also, in the instruction of students the comparison of placental sections where the cord was tied early with others where it was tied after pulsations ceased provides convincing evidence that the infant benefits when the latter procedure is adopted.

#### MATERNAL COMPLICATIONS.

Premature Separation .....	5	Manual Removal of Placenta ...	3
Placenta Previa .....	1	Abdominal Pregnancy (Term) ..	1

The interpretation of a number of maternal complications depends upon the placenta, and we have encountered ten such cases.

In the event of premature separation our interest is to learn how much of the placenta is thrown out of function, what relation the location and the size of the separated area bears to

the severity of the hemorrhage, and what region, if any, is most prone to become separated prematurely. This complication does not always have the same effect upon the foetus, though frequently it is fatal. Among the cases reported here only one terminated with the birth of a living child. In a great measure the result for the foetus is determined by the degree of separation; but may not other factors be involved? It is my impression that the complication is less serious for the foetus when the separation is confined to the circumference than when it penetrates the center of the placenta, even though no greater area is involved. However, with so few observations a dogmatic statement is undesirable.

Not only a better understanding of defective but also of normal placentation proceeds from the study of abnormal cases. Accordingly, intimate investigation of placenta previa is well repaid and also the investigation of a placenta which separates too early or one which is retained. In the event of a subsequent pregnancy, such information may serve as a guide for the proper treatment, and indeed did aid us in one instance. A multiparous woman with a history of puerperal infection, when first my patient, suffered from a serious hemorrhage during the third stage of labor. The placenta was removed manually. The firm attachment was explained by fibrous adhesions between the uterus and a portion of the placenta. When eighteen months later, anticipating the same complication, the patient entered the hospital for the birth of her fifth child, Caesarean section with supravaginal hysterectomy was performed. The pathological condition which existed in the previous pregnancy was again found and justified the operative treatment.

Very frequently the accurate knowledge of the placenta contributes to a clearer understanding of the physical condition of the foetus. For example, when delivery occurs prematurely the placental findings are significant, for in that case the question of syphilis may always be fairly raised. Such a possibility we considered from various angles in seventeen premature deliveries where the foetus was between 30 and 40 cm. long and weighed between 1,000 and 2,000 grams. In six instances

the diagnosis of syphilis was established; in the others it was excluded. All the syphilitic infants died; the mortality among an equal number of premature infants born of mothers suffering from eclampsia or allied intoxication was fifty per cent.

#### PREMATURE INFANTS.

(Weight 1,000 to 2,000 grams: Length 30 to 40 cm.)

Cause	Living	Dead
6 Syphilis .....		6
6 Maternal Toxaemia .....	3	3
1 Pyelitis .....		1
1 Extensive Infarction .....		1
3 Undetermined .....	1	2

Unless glaring symptoms of some other disease are present there is a tendency to regard as syphilitic every premature infant. Obviously, this is incorrect; in our small series syphilis was present in roundly a third of the cases. The diagnosis was established upon the evidence afforded by both the placenta and the Wassermann Reaction. The results of these tests, as I have found in a series of consecutive deliveries, closely agree, but before discussing this point let us review the evidence upon which the diagnosis of placental syphilis rests.

Contrary to the teaching of the past generation which lacked accurate means of investigation, it is unsafe upon the gross appearance of the placenta alone to base a diagnosis of syphilis. When the foetus has died sometime before its birth, no matter what the cause, the placenta may be very firm, may have a gray, anaemic color and the maternal surface may have a greasy appearance. Nor do large placentae always denote syphilis. Labourdette<sup>1</sup> has also demonstrated that, as a sign of syphilis, less importance than we had supposed attaches to the relationship between the weight of the placenta and the weight of the foetus. In cases where this disease could be excluded through the history and a negative Wassermann Reaction he found the ratio not infrequently 1:5, 1:4, and occasionally 1:3. The relationship appears somewhat more reliable when applied to premature

<sup>1</sup> Gros Placentas et Syphilis. Paris Thesis, 1913.

infants, but in these circumstances it is important to remember that prior to term the placenta normally weighs more than a sixth of the weight of the foetus.

More trustworthy evidence of syphilis is found in the chorionic villi. When freshly teased in normal salt solution or water and examined microscopically, if syphilis is present, the villi are enlarged, opaque, and irregular in shape with swollen ends. Characteristically, also, the blood vessels are not apparent in many of the villi. While such findings are suspicious they should be verified by the examination of properly fixed, hardened, and stained sections before the diagnosis of syphilis is positively made.

Stained sections mainly show huge, dense villi, but, they provide a more satisfactory opportunity than the fresh villi for observing the blood vessels. There the pathological process seems to begin; the wall of the vessel is the seat of an endarteritis which frequently obliterates its lumen. The enlargement of the villi is due to proliferation of the stroma. So rarely may spirochate be demonstrated that clinically the procedure has not proven useful.

With these histological changes as a criterion for syphilis we have examined 600 placentae: the findings warranted a positive diagnosis in fourteen cases. At first we did not request a Wassermann test but later, through the kindness of Doctor L. S. Schmitt, who carried out the serological tests, a Wassermann Reaction was made upon every woman who was a patient in the obstetrical ward of the hospital. Therefore, I am able to report the results in 260 cases where the placental findings were controlled by the Wassermann upon the mother. These cases fall naturally into four classes.

#### COMPARISON OF THE WASSERMANN REACTION AND THE PLACENTAL FINDINGS.

Group	Wassermann	Placenta	Number Cases
I .....	Negative	Negative	242
II .....	Positive	Positive	7
III .....	Negative	Positive	1
IV .....	Positive	Negative	10

In Groups I and II which include 249 cases (95%) there was absolute agreement between the Wassermann Reaction and the placental histology.

The single case in Group III in spite of the negative Wassermann test must be regarded as syphilitic. This woman, twenty-seven years of age, had four consecutive miscarriages. The pregnancy we observed ended spontaneously at the eighth lunar month. The foetus, 40 cm. long, weighed 1,960 grams; the placenta weighed 480 grams and the chorionic villi were definitely syphilitic. At autopsy upon the foetus, organic lesions characteristic of congenital syphilis were found. Therefore, excepting the result of the Wassermann, all the evidence pointed to the presence of syphilis. The conclusion, then, must be that occasionally the placenta enables such a diagnosis to be made when the Wassermann Reaction is negative.

However, this case does not constitute a new criticism of the Wassermann Reaction. Serologists agree that syphilitic individuals, even when suffering from secondary manifestations, may not show a positive reaction, and as time passes the likelihood of a negative test gradually increases.

Group IV, comprising ten cases, is not so discordant as would at first appear, for a strongly positive Wassermann Reaction (++++) was obtained only in two instances. One of these patients was suffering from a streptococcus infection which probably was responsible for the reaction. At least the Wassermann test alone indicated that the case was syphilitic. No history of a specific infection could be obtained, and the chorionic villi were normal. On the other hand, the foetal surface of the placenta was the seat of an inflammatory infiltration; streptococci were found in the subamniotic connective tissue. This organism also was present in microscopic sections of the cord and on the third day of the puerperium was isolated from the uterine cavity. The infant died of haemophilia; at autopsy the lesions of congenital syphilis were not demonstrable. Therefore, the positive Wassermann in this case would not seem attributable to syphilis. Occasionally, in the course of scarlet fever analogous results have been obtained.

Almost certainly, the second case in which the Wassermann Reaction was strongly positive but the placental findings negative, was syphilitic. On September 5th, and again at the time of delivery on November 18, 1914, the serological test was positive. Furthermore, the mother gave a history of specific infection eight months previously and had not been treated. The maceration of the foetus made it impossible to identify the lesions of congenital syphilis; stains for spirochaete were not made.

The teased, chorionic villi were suspicious of syphilis, though the stained sections were negative. It may be, however, that other areas of the placenta would have presented the characteristic evidence of syphilis. For, that normal areas occur in syphilitic placentae is a well known fact. Certainly, in this case the weight of evidence favors the diagnosis of syphilis and also favors the conclusion that occasionally the Wassermann Reaction is more trustworthy than the placental histology.

In the eight remaining cases of Group IV, the Wassermann reactions were faintly positive. The serologist reported six results as a single +, and two as a double +. It is significant that every one of these patients was suffering from a toxæmia of pregnancy with albuminuria. Yet the severity of the intoxication did not determine the degree of fixation presented by the serological test. Thus, a double + was once reported when the albuminuria was of a mild grade, and, on the other hand, several times a single + occurred when the albuminuria was severe.

A second Wassermann test was not made in these cases but in none of them could a history of syphilitic infection be obtained. The placentae were normal, and the infants were healthy. When discharged from the hospital they were in excellent condition. Four weeks later they were visited and none of them had developed stigmata of congenital syphilis. From the available information it seems that these infants were not syphilitic, though a longer period of observation would be required to establish the fact absolutely. Taking together all the evidence it is little short of certainty that the faintly positive Wassermann of these mothers was not due to the usual cause.

The frequency with which the Wassermann Reaction is positive during toxæmia of pregnancy, and the question of its association

with a definite type of auto-intoxication are interesting problems. The limited data at hand does not permit an uncompromising view, but it is pertinent that among the 260 cases upon whom serological observations were made there were 22 patients suffering from albuminuria and in 14 the Wassermann Reaction was negative. Approximately, then, in every third case a positive reaction obtained. Whether syphilis underlies these toxæmias is a question which may be raised, but to me it seems more likely that some substance in the blood, referable to the metabolic disturbance, causes slight fixation when an examination is made according to the Wassermann technique.

To summarize briefly the conclusions reached from the analysis of 260 cases, in the first place, it is clear that the chief source of confusion in the interpretation of the Wassermann test during pregnancy lies in the presence of an auto-intoxication attended by albuminuria. The suggestive reaction which frequently accompanies this toxæmia must be attributed—as serologists generally attribute slight degrees of fixation—to some condition independent of syphilis. Classifying these cases of toxæmia as negative for syphilis and also taking into account the cases in which Wassermann and placenta were both in agreement we have arrived by each method of investigation at the same result in 257 instances or nearly 99% of the cases.

Contradictory results were present in three cases. One of them yielding a positive Wassermann was suffering from a streptococcus puerperal infection and, it would seem, not from syphilis. This disease, however, was certainly present in the remaining two cases in one of which the Wassermann was negative while the placenta was positive; in the other the Wassermann was positive but the placenta negative. Accordingly both examinations were required to make sure the diagnosis.

The microscopic examination of the umbilical cord is without great practical value toward establishing the diagnosis of syphilis. Only in rare instances, as Emmons<sup>1</sup> has shown, may Spirochaete be

<sup>1</sup> The Diagnostic Value of the Search for Spirochaeta Pallida in the Umbilical cord of the new-born. Boston Med. and Surgical Journal, 1910, clxii, 640-641.

demonstrated there. Moreover, exudative inflammation of the umbilical vessels which Bondi<sup>1</sup> regarded specific for syphilis may be quite independent of this disease. In an analysis of 400 obstetrical cases Simmonds<sup>2</sup> definitely established the presence of syphilis in 40 instances and only half of these cases presented inflammatory changes in the umbilical cord. On the other hand, in 32 cases where syphilis could be excluded comphalitis was present. The etiological factor was not determined by Simmonds but probably, as in similar cases we have studied,<sup>3</sup> bacteria had gained entrance to the cord through the placenta.

Generally, placental bacteremia occurs in cases in which the membranes have ruptured prematurely, either at the onset of labor or at least several hours before delivery. The frequency of this complication is notably increased in cases of abnormal presentation, of contracted pelvis, and of elderly primiparae, and therefore, is more often seen in hospitals than in private practice. However, since my attention was directed to the complication and the placenta has been studied with reference to it, I have been surprised at its frequency.

The lesion consists of an acute exudative inflammation beginning upon the foetal surface of the placenta and since the foetal blood vessels cross this region they are quickly involved. By appropriate staining methods bacteria may be demonstrated in the subamniotic connective tissue, at times also in the walls of the foetal blood vessels. Perhaps, because the time interval is not sufficient, in most instances the infection does not spread to the decidua, and the villi are rarely involved. Evidently the bacteria enter the placenta from the amniotic cavity. Infection of the amniotic fluid occurs because the membranes have ruptured prematurely and vaginal examination leads to the contamination of the amniotic cavity.

The mechanism has become much clearer since we have learned that when the membranes rupture prematurely the amniotic epi-

<sup>1</sup> Die syphilitischen Veränderungen der Nabelschnur. Arch. f. Gynack. 1903, lxi, 223-248.

<sup>2</sup> Nabelschnurentzündung und Syphilis. Virchow's Archiv. 1912, ccix, 146.

<sup>3</sup> Placental Bacteremia. Jour. A. M. A. 1915, LXV, 1265-1268.

thelium loses its cuboidal form and becomes tall and narrow. The basal attachment of the cells is considerably restricted. The nuclei are dislocated upward and at times actually forced through the cell membrane. These alterations seem to be merely the expression of mechanical forces referable to the retraction of the uterus. From the histological picture it is evident that the function of these cells is greatly impaired, or absolutely terminated, and in the course of time they are desquamated for longer or shorter stretches leaving the amniotic connective tissue uncovered. Probably, through these portals the bacteria gain entrance to the placenta.

#### FOETAL AND EARLY INFANT DEATHS.

(Weight over 2,000 grams; length over 40 cm.)

Syphilis .....	7	Toxaemia of Pregnancy .....	2
Birth Injury .....	6	Enlarged Thymus .....	1
Premature Separation Placenta..	4	Pneumonia .....	1
Placental Bacteremia .....	4	Abdominal Pregnancy .....	1
Congenital Heart Lesion .....	3	Undetermined .....	4

As the placental invasion is usually limited to the amniotic surface of the placenta the complication is more likely to be serious for the infant than for the mother. Not infrequently infection of the foetus leads to its death either shortly before or within a few days after it is born. If my experience is not unusual, as a cause of foetal death, placental bacteremia is out-ranked only by syphilis and birth injuries.

Since the lesions depend for recognition upon the study of histological section, routine study of the placenta for the purpose of demonstrating bacteria should be undertaken whenever intrapartum fever occurs or when labor is prolonged after the membranes rupture. By this means the presence of bacterial infection may be demonstrated in cases where otherwise the cause of foetal death would remain undetermined.

#### RECAPITULATION.

Gross Anomalies .....	41 Cases	Premature Infants .....	17 Cases
Maternal Complications ..	10 "	Question of Syphilis .....	18 "
Death of Infant .....	33 "	Placental Bacteremia .....	4 "

Recapitulating the results of the study of 600 placentae, we have found that approximately one of 5 or 6 specimens presented some departure from the normal or required examination to elucidate clinical manifestations on the part of the mother or the infant. Moreover, when the placenta was normal the pediatrician was interested in the fact, for this information made it more certain that the infant began life with a clean bill of health.

In well organized clinics the careful study of the placenta should be insisted upon not only at the bedside but also in the laboratory. Such rigid requirements cannot be exacted of the practitioner, but if he wishes not to overlook important data he should supplement bedside observations with study of the placenta in his laboratory. It should be weighed and measured, gross abnormalities noted, fresh tissue teased, and the chorionic villi studied microscopically. These data should be recorded and thus become more reliable, if in the puerperium some complication develop which requires for its interpretation a knowledge of the placenta.

When the teased villi suggest the presence of syphilis the placenta should be sent to a pathological laboratory and stained sections prepared to establish the diagnosis. Simultaneously a Wassermann test upon the mother's blood should be made. Similar precaution is advisable if delivery occurs prematurely. At times a diagnosis of syphilis will be the result, but more frequently the investigation will remove all suspicion of that disease. Finally, if the infant is stillborn or dies within the first few days of extrauterine life study of the placenta should be comparable in painstaking care to that given the organs at an autopsy.

## DISCUSSION.

DR. R. F. RAND (New Haven): *Mr. President and members of the Society:* In connection with this very interesting and startling study of Dr. Slemons I feel that the hope of a solution is before you of certain deaths of infants in utero and early in their life. We usually ascribe syphilis as the cause of death of infants in utero and of infants in their early days, the death that so often occurs during the first week. A good many of these infants do not show any growth or any microscopic evidence of syphilis, and this explanation of bacterial invasion through

the chorion may account for the death. The clinician must feel that he has neglected opportunities to diagnosis in the past and that in the future he may have a satisfactory diagnosis from such a study.

Abnormalities of the placenta in private practice certainly are less than we find in the hospitals. I have had broad experience and in comparing my private patients with those seen in the hospital I thought Dr. Slemons' hospital abnormalities were larger than in my own experience. Certainly very much larger than I find in private practice. But I have had a dozen abnormal cases in private practice in about 600 and I think placental examination has been very desirable and very helpful.

The problem that comes to me immediately is how we are going to have these placentae examined. We can carry placentae home but very few of us I think have facilities and have the time to make a satisfactory scientific and routine study of all cases, and the only solution in my mind is the coöperation with the laboratory. As Dr. Blumer has said, the group work of physicians is the coming, and at present started, method of practicing medicine, and this group work will certainly help us in this problem.

I don't think Professor Slemons made it quite clear as to whether these bacteria invade the placenta through the vagina or a hematogenous infection. I wish he would make that clear. There are certainly numerous bacteria in the vagina, and in the practice of one of my colleagues a fatal sepsis followed labor and there had been at no time either vaginal examination of the patient or uterine douches during the week immediately preceding the birth, and this is regarded as a case of pure autogenous infection. The baby was born alive before the physician was in attendance. The woman had been perfectly well and she died of a virulent streptococcus infection. I would like also to ask Professor Slemons if these cases of bacteremia show a post partum infection in the mother. I am very glad to have had the privilege of reading and hearing this exceedingly interesting paper.

DR. C. H. SPRAGUE (Bridgeport): With the permission of Dr. Slemons I would digress a bit from the subject in hand to cite a case which I have and which may prove of some interest. This woman was delivered at Bridgeport Hospital, a normal delivery, the child apparently normal and a casual examination of the placenta showed it to be apparently normal. She had an uninterrupted recovery and stayed there about three weeks. She returned home with practically no discharge. She had been home a week when she started flowing, she had been doing no unusual work, in fact she had not been doing any work, a nurse taking care of the baby and a maid doing the house work. As stated, about a week after she returned she commenced flowing quite profusely. I made an examination and found the uterus quite large. I might say that there was a possibility that she did

have an extra placenta. I gave her local and medical treatment with no apparent results. She was nursing the baby but I advised and did a curettage. The uterus was quite large. For about a week after the curettage the flow was quite profuse and I noticed that after each nursing the flow would be considerably increased. I may say the patient was a slender, excitable woman and not perhaps in the best of health before the delivery. I didn't want to take the child from the breast if I could avoid it so continued the nursing and each time there was a considerable increase of the flow. I finally decided to take the child from the breast and did so, and immediately the flow ceased. Almost immediately, within two days from the time the child was taken from the breast, the flow ceased and a week later I made an examination and found the uterus in apparently normal condition.

DR. J. MORRIS SLEMONS (New Haven): In answer to Dr. Rand's questions there are three ways in which the amniotic fluid may become infected; first, from the blood; second, from the peritoneal cavity, by traveling down the Fallopian tubes; third, infection may travel upward from the vagina. Hellendall, working with pregnant rabbits, has demonstrated that bacteria may travel along either of these three routes. It is very doubtful if the first two possibilities play a large part in human pregnancy, but of course an infection of the foetus from the blood of the mother has frequently been demonstrated. It is quite plausible also that infection may travel down the Fallopian tubes, secondary to appendicial inflammation, but it does not occur often if at all. It is interesting, however, that in experiments upon rabbits Hellendall has demonstrated that peritoneal infections may take the tubal route. In all the cases of bacteremia which I have seen the membranes ruptured early and I believe the infection of the amnion proceeded from the vagina.

The second question of Dr. Rand regarding the maternal morbidity after placental bacteremia is likewise important. I can't answer the question in exactly that way; but with intrapartum fever, the maternal morbidity is approximately sixty per cent. Probably, therefore, placental bacteremia carries with it a morbidity of sixty per cent.

## Mental Defectives.

PAUL WATERMAN, M.D., HARTFORD.

This subject is presented on account of its general and local interest, the first consisting in the fact that a rapidly increasing importance is being given to feeble-mindedness by communities, both national and local, with the result that lay activity in this field, if not lay knowledge, appears to have distanced that of the general medical profession, whereas I believe that mental defect in its diagnosis and treatment should remain within the scope of medicine and that, therefore, physicians as individuals and as groups should maintain an intelligent and determining knowledge of the subject. Its special and local interest is derived from the fact that almost the very earliest scientific work ever done with defectives was done in Connecticut and that this State made the very first acknowledgment of state responsibility in this matter by legislative study of the social relations of the feeble-minded in 1855, and finally that after many years of inactivity this State is again becoming convinced that this responsibility must be met in a more scientific manner.

The terminology and in a lesser degree the classification of this subject has been somewhat confused, but during the past ten years certain terms and classes have been authoritatively established. I have used the title "mental defectives" because this term is one commonly used in this country for cases displaying "a state of mental defect from birth or from an early age, due to incomplete cerebral development, in consequence of which the person affected is unable to perform his duties as a member of society in the position of life to which he is born." The terms *amentia* and *mental deficiency* are also often applied to the general condition. The British Royal Commission on the Care and Control of the Feeble-minded defines nine classes of persons needing care and control, as follows :

1. Persons of unsound mind,
2. Persons mentally infirm,
3. Idiots,
4. Imbeciles,
5. Feeble-minded,
6. Moral imbeciles,
7. Mentally defective epileptics,
8. Mentally defective inebriates, and
9. Mentally defective deaf and dumb or blind persons.

Of these classes we see that the last seven fall within our definition, while the first two represent the insane and demented cases.

English law has defined:

1. An idiot as "a person so deeply defective in mind from birth or from an early age that he is unable to guard himself against common physical dangers";

2. An imbecile as "one who by reason of mental defect existing from birth or from an early age is incapable of earning his own living, but is capable of guarding himself against common physical dangers";

3. A feeble-minded person as "one who is capable of earning a living under favorable circumstances, but is incapable from mental defect existing from birth or from an early age,

a. of competing on equal terms with his normal fellows, or

b. of managing himself and his affairs with ordinary prudence";

4. Feeble-minded persons under the age of sixteen years under the title "mentally defective children" as "children who, not being imbecile and not being merely dull and backward, are by reason of mental defect incapable of receiving proper benefit from the instruction in the ordinary public elementary schools, but are not incapable by reason of such defect of receiving benefit in such special classes or schools as are in this Act mentioned," the Act referred to being the Defective and Epileptic Children's Act of Parliament of 1899; and

5. A moral imbecile as "a person who displays from an early age and in spite of careful upbringing strong vicious or criminal propensities, upon which punishment has little or no deterrent effect."

Thus in English usage we note that the diagnosis and grading of mental defect is made upon the social behavior of the case, medical or psychological criteria being applied solely to determine whether the faulty social reactions are due to mental defect dating from birth or from an early age. In 1904 Binet and Simon published the results of an effort to establish a more definite educational or psychological basis of diagnosis and classification by means of determining the normal intellectual capacities of the various years of childhood and of simple tests by which these capacities could be checked and the intellectual level of the individual rated. Acting on this method of diagnosis The American Association for the Study of the Feeble-minded in 1910 adopted the following definitions:

"Feeble-mindedness generally to include all degrees of mental defect due to arrested or imperfect mental development, as a result of which the person so affected is incapable of competing on equal terms with his normal fellows or of managing himself or his affairs with ordinary prudence. The feeble-minded are divided into three classes, as follows:

1. Idiots, those so defective that their mental development never exceeds that of a normal child of about two years,
2. Imbeciles, those whose development is higher than that of an idiot, but whose intelligence does not exceed that of a normal child of about seven years, and
3. Morons, those whose mental development is above that of an imbecile, but does not exceed that of a normal child of about twelve years.

These terms are properly applied only to children who show retardation of the intelligence amounting to at least three years or if they are under nine years of age to at least two years."

Thus it is noted that in this country we term cases with the least defect "morons" instead of "feeble-minded" and apply

the latter title to the whole class of defectives. Each of the major divisions is divided into three grades,—high, middle, and low, and each of these in turn into two types according to the reactions of the individual case as apathetic or excitable.

Another classification can be made on a loose etiological basis under the headings primary and secondary, the former including cases defective from birth in which no anatomical cause is evident, with three groups,—simple, microcephalic, and Mongolian, simple when heredity is assumed to be the only cause, microcephalic when the small size of the head is significant, and Mongolian when the facies simulate the Mongol type. The secondary class includes cases directly ascribable to some disease or injury under the two headings brain-disease or injury and malnutrition, the first including cases following injuries, either at birth or later, convulsions, inflammation, either meningitic or encephalitic, vascular disorders, either haemorrhagic or involving excessive amount of cerebro-spinal fluid, giving three pathological types,—porencephalic, sclerotic, and hydrocephalic, and cases of syphilis and of cerebral degeneration. The malnutrition group includes cases of cretinism and others resulting from isolation or sense-deprivation.

Another classification can be made according as the cause is ante-natal, natal, or post-natal in time of occurrence. The ante-natal causes include heredity, acting alone or with some other cause, and injury to the foetal brain by accident or disease of foetus, mother, or both; the natal causes include abnormal labor, primogeniture, and prematurity, of which the two latter have little value; and the post-natal causes include accident or disease of the brain after birth, of which the most important are meningitis, haemorrhage, and convulsions.

Convulsions have a two-fold relationship with feeble-mindedness in that they may be either causative or coincidental, and either secondary or idiopathic, so-called,—that is, a toxic or inflammatory condition may cause convulsions in a relatively normal brain, and these convulsions by their severity may cause such injury to the brain as to produce an arrest of development, or both feeble-mindedness and convulsions, epileptiform or

actually epileptic, may result from the same defect of the brain, most commonly a gross injury from haemorrhage or difficult labor. Epilepsy thus causes on the one hand an arrest of development, which, if occurring during childhood, produces feeble-mindedness, and on the other hand a progressive mental deterioration if the patient has reached a point of mental development from which he may deteriorate.

Another classification has been made on a loose combined basis as follows :

1. Microcephalic,
2. Sense defects,
3. Hydrocephalic,
4. Hypertrophic,
5. Oxycephalic, or tower-skull,
6. Mongolian,
7. Tuberculous,
8. Birth palsies,
9. Cretin, and
10. Primary Neurotic.

Syphilis does not appear as an important factor in any of these various classifications, partly perhaps because its relation has not been discoverable by the old methods of examination and diagnosis. There is a distinct possibility that it may be given a greater causative value by our new viewpoints and methods of examination, as being effective through impairment of the germ-plasm, through direct involvement of the brain or meninges, in which way it might account among others for the so-called hypertrophic cases in which there is an excess of supporting tissue, or through vascular disorders causing impaired nutrition or haemorrhage.

The important points of classification to be kept in mind are the grades of defect and the cause, whether congenital or acquired, because on the first depends the sort of life that the individual case will be capable of living or should be allowed to live, involving education, occupation, and social freedom or restraint, and on the second the question of permitting procrea-

tion, because the congenital type will probably transmit feeble-mindedness, whereas the acquired type may not transmit it.

In addition to the definite forms of feeble-mindedness described there are many cases hovering on the borderline of the normal which have been divided into more or less clearly defined groups, although the terminology therefor has not been placed on a universally accepted basis.

The term "retarded" is applied to children that show an arrest of development but are not more than three or four years behind the normal mental age for their years and cannot at the moment be designated feeble-minded, either because their years are not yet sufficient to make sure that they will remain at a feeble-minded level or because it is assumed that mental development has been impeded by some physical disorder or environmental condition, on the correction of which they will tend to rise to the normal level.

The term "dull and backward" is applied in much the same way, but with a definite implication of a physical or external cause for the failure of normal development and of rating within normal limits.

The term "subnormal" has been applied to all the cases on the defective side of the borderline above feeble-mindedness and includes the following types:

1. Cases that pass the Binet test for twelve years, but are still generally lacking in intelligence or have some special defect;
2. Cases unable to pass the Binet test, but with some special ability;
3. Cases that are retarded less than three or four years;
4. Doubtful cases; and
5. Cases that are defective solely in relation to the limited social sphere into which they are born.

From a social point of view both morons and subnormals can be classified under three headings:

1. Cases defective nearly on a general level,
2. Cases with special defects which produce anti-social reactions, and

3. Cases with special abilities which tend to make social success possible.

Another group is represented by the term "constitutional inferiority" which is commonly used but in a rather ill-defined sense. It has been defined as representing "an incapacity for social self-control and includes cases presenting abnormal social and mental reactions to the ordinary conditions of life, except such as belong to the classes of insanity, neurosis, or feeble-mindedness." Used in this sense it appears to coincide closely with the term "subnormal," but with an implication of a relatively higher capacity and of an incapacity that is chiefly relative to the social level in which the individual is placed.

Another class, and one which stands somewhat above the borderline, includes persons having some "mental peculiarity" due to some twist or impulsiveness or to the over-development of some special capacity, which brings them into more or less social conflict with their environment.

Psychiatrists have for some years past described two groups which, taken together, include most of the cases that I have above indicated as coming under the headings "inferiority" and "peculiarity." These are "constitutional psychopathic states" and "psychopathic personalities," of which the first includes such conditions as compulsive and impulsive actions, which may arise from mental defect, as well as others that fall outside our present field, such as nervousness, constitutional depression and excitement, and sexual abnormalities; the second group includes constitutional criminals, represented by moral insanity and professional criminality; the unstable, presenting simple instability, pseudo-dipsomania, or habitual criminality; constitutional liars and swindlers; and pseudo-querulants. We thus see that there appear to be transitional cases from feeble-mindedness to normality on the one hand and to psychoses on the other.

Considering the causes of feeble-mindedness we find that the group of secondary cases,—that is, those in which the defect can be definitely ascribed to some trauma or disease of the individual, forms only about 10% of the whole number, while the

most careful investigations of recent years represent heredity as the known single efficient cause in 50% of all cases and as the probable cause in 10% more. In idiocy it appears as the cause in 50% of cases, in imbecility in 64%, and in morons in 77%, thus being more effective in the higher grades. English authorities give a value of 80% to neuropathic heredity, whereas the value of 50% plus 10% indicates direct feeble-minded heredity solely. Alcoholism in parents is not yet established as a sole efficient cause, although it increases the number of miscarriages and of deaths in infancy in both normal and defective families, and may impair the developmental capacity of children, both normal and defective, and although in defective strains it does appear to double the number of feeble-minded children in a family, still in relation to mental defect it serves more definitely as an effect than as a cause and occurs twice as often in defective families as in normal families.

In order to understand the effect of heredity in mental defect we must bear in mind some of the general principles of heredity. The transmission of a trait is assumed to occur through the presence in the parents' germ-plasm of specific determiners for the development of a similar trait in the offspring. If the determiner is not present in the germ-plasm of either parent, the trait cannot appear in the child. The majority of human traits are so complex that they cannot be ascribed to single determiners, but some of them have been found to be simple and directly transmissible as such independently of other traits, in which case they are known as unit characters, such as color of the hair and eyes, haemophilia, and brachydactylism. Normal mental development appears to act as such a unit character and results from transmission to the offspring from one or the other parent or from both of a specific determiner or determiners for such normal development. If the offspring receives determiners from both parents, all his get in turn will receive a determiner, but if he receives it from one parent only, then there is just an even chance that his children will not inherit it from him. Supposing that both parents each received the determiner from one parent only then the law of chance would give one-fourth

of the children a determiner from each parent, one-fourth none from either, one-fourth one from one parent only, and one-fourth one from the other parent. The first are spoken of as duplex, the second as nulliplex, and the last as simplex. This is a part of Mendel's law of heredity, normal mental development being a positive, dominant trait, and feeble-mindedness recessive and due to the lack of something. Both theoretically and practically we find that when both parents are feeble-minded all children will be feeble-minded; when one parent is a duplex normal and the other feeble-minded, all children will be normal, but simplex; when both parents are simplex, one-fourth of the children will be feeble-minded and three-fourths normal, but of these latter one-third will be duplex and two-thirds simplex; when one parent is simplex and the other duplex, all children will be normal, but half of them will be simplex and the other half duplex.

The conclusions that can be drawn from these formulae are simple, stated as follows:

1. All children of definite feeble-minded parents will be themselves feeble-minded,
2. Theoretically feeble-mindedness can be bred out by mating feeble-minded persons only with persons from family strains known to be normal,
3. Practically such breeding out is impossible under human conditions because there are many normal persons of the simplex type and thus capable of reproducing feeble-mindedness in case of mating with other simplex normals, and
4. The formulae do not always work in mixed matings because the number of children in a family is not sufficient to give full play to chance.

The question whether a normal person is simplex or duplex to relation to feeble-mindedness or rather to normal mental development can be determined only by a careful study of the family strain. If no cases of feeble-mindedness are to be found in the family, other than cases known to be purely secondary, the presumption is that the individual is a duplex normal, but

if any primary cases are found there is a possibility that the individual is only a simplex normal. In estimating the strain, there are two types of primary congenital feeble-mindedness to which full hereditary value should not be given, because they do not necessarily indicate a defective strain,—namely,

1. Mongolians, who often occur as the sole case in a family and are thought to result from some physical disorder of the mother during gestation, and
2. The last child or children of large families, probably due to impaired maternal health.

True epilepsy also seems to be inherited as a unit character of recessive type, and by some authorities is regarded as mutually interchangeable with feeble-mindedness. The relation between insanity and feeble-mindedness in heredity is much less intimate, in that the functional heritable psychoses are inherited as a psychopathic susceptibility in a fully developed brain, while feeble-mindedness is inherited as a lack of capacity for full development of the brain.

In the diagnosis of mental defect the most common criterion has been a purely practical one, and usually crudely applied,—namely, the social reaction of the individual. If he showed little or no intelligence and could not care for himself, he was an idiot; if he knew something, but not much, and could care for himself only under the simplest conditions, he was an imbecile; if he seemed to know a fair amount, but failed to maintain himself in his social or economic level, he was simple, peculiar, eccentric, lazy, or a born loafer or tramp; if he kept getting into trouble with the law or repeatedly transgressed certain fundamental social conventions, without being reformed by punishment or prayer, he was incorrigible, a confirmed criminal, or a moral imbecile. We knew that a normal child does not need to be burned more than two or three times before he learns that fire is dangerous, so we placed all cases that were unable to learn from a reasonable amount of experience in the feeble-minded class. The past ten years have given us more accurate methods of determining the causes of these faulty social reactions of the

individual by evaluating his natural and acquired intelligence, his common sense and his knowledge, the character and force of his impulses and his ability to control them, his capacity to plan courses of action and to carry them out consistently, his susceptibility to suggestion, and his ability to learn from experience. The first successful test for this purpose was worked out by Binet and Simon of Paris in 1904 and in a somewhat revised form it remains the present standard method of determining the intellectual level of the individual. It is fairly accurate up to eleven years, but represents a low average intelligence and falls a little more than a year behind the accomplishments of a really well instructed child of good family. Its results are expressed in terms of years of mental age, as for instance, five years mental age for fifteen years chronological age, which would place the case in the class of imbeciles, middle grade. The test is simple, but its application demands considerable experience on the part of the examiner in order that he may standardize his methods of giving the test and of rating its results, this being necessary although the test is put in such a form as to minimize the effect of both the personal equation of the examiner and the formal education of the patient. The test fails us, however, just at the point where we most need scientific assistance, because, as we have said, it is of little value in estimating a mental age above ten years, and it is in the higher grades of defect above this level that we are most in need of accurate methods of diagnosis. It has therefore been supplemented by numerous investigators by diverse and more complex tests to determine the social capabilities of these higher grade cases and has lately been modified into the form of the so-called "Point Scale Test," although a sufficient number of norms has not yet been obtained for this latter test to render it useful and trustworthy except in highly trained hands.

A third method of diagnosis is the strictly medical, which determines the case to be feeble-minded by means of noting the peculiarities of measurement, physical development, and deformity that so commonly accompany feeble-mindedness that when present they are relied upon as pathognomonic. These include deficient

growth, peculiarities of facies, speech and movement, and deformity of skull, palate, teeth, and ears, but reliance upon them leaves one at a loss in their absence, as may occur often enough, even in low grade cases.

The proper diagnosis combines all these methods,—social, psychological, and medical, and by their means a fairly accurate opinion can be obtained concerning the existence of feeble-mindedness and concerning the probable maximum level which the case can reach and the forms of occupation which he can learn and by which he can make himself most useful and least harmful.

The highest grades of mental defect, both feeble-minded and subnormal, present difficulty in diagnosis as well as treatment. In adjudicating them for either purpose we must bear in mind that no absolute minimum level of normal intelligence can be set for universal application, that we cannot apply the same measuring rod to all races and classes of people. It is true enough that feeble-mindedness is a variation from the racial norm, just as insanity is a variation from the individual norm, and that a fixed minimum standard of normal mental development could be established easily enough for a homogeneous, stable group, but in most countries of to-day social groups are neither homogeneous nor stable. For purposes of diagnosis as well as of treatment we must estimate mental defect in terms of intellectual levels in relation to the general level of the group in which the defective has to meet the problems of life. While we know that a man or woman whose intelligence never grows beyond our normal eight-year level will not be successful in independent competition in our community and will probably come into serious conflict with our laws and conventions, still we can readily imagine a stage of civilization in which such a person could get along fairly well without assistance and without showing much variation of conduct from those about him. We know that some defectives with a good intelligence insist on yielding to their impulses or in gratifying purely selfish desires to such an extent that our society cannot tolerate them, but we do not need to go back far into the past of our race to find a time when

war, rapine, theft, and murder were standard methods of earning a livelihood. The normal type of those days closely resembles the higher grade defectives and subnormals of our day,—the repeating criminals and the moral imbeciles. Their intelligence, as such, may be good, they may have done well or excellently in their school work, but they fail in the more complex problems of life. A youth of two thousand years ago might pass through our high school curriculum with an excellent record, but a man with the common standards of two thousand years ago would probably test our social patience to its limit. There are many grown-ups in our communities who are really children when measured by social standards, one, two, or three thousand years younger than their fellows in terms of social or cultural evolution. Many of them know the fundamental rules of behavior, but much in the same way as a child knows the copy-book maxims which his hand has written so many tens of times,—they know the forms but do not feel their force, with the result that the rules do not exercise a controlling power over their actions; the principles are not so intricately interwoven in their social or moral concepts as to arouse a feeling of warning or of fear when they are in danger of being transgressed. It is these cases that are most difficult to evaluate and to handle. They are often bright, sometimes brighter than most of us, in a superficial manner, and quite likeable. Family and friends often sacrifice more for them than they would for a much more honest, worthy person of a less companionable or agreeable temperament. Their good qualities are the very product of their childishness, in that they would rather be happy than serious, like to be the center of interest and admiration, and do their utmost to avoid trouble and worry. The very mainspring of their life is their egoism, egocentricity, selfishness, individualism, although we usually reserve the latter term for the more successful manifestations of the trait, and their selfishness differs from that of the rest of us in that they want their desires fulfilled at once, fail to understand why they must be patient and to appreciate the real cost of their desires to themselves and others, and, if hampered too much in their attainment, tend to develop a childish grudge against the

individuals whom they regard as the cause of their disappointment, and if the restrictions are continued the grudge often grows into an exaggerated and perverted form with actual control over their behavior so that for a time they may be regarded as insane. Freed from restrictions they become their old contented but restless or lazy selves again, or if placed under the routine of an institution they soon accommodate themselves so well to conditions that they cannot be longer detained as insane and are discharged to a repetition of the same course of events with considerable danger to the people involved in their grudges. Such cases are usually highly susceptible to the toxic effects of alcohol and their judgment and self-control are seriously impaired by small quantities of it, thus rendering them a still more active menace to society. The doctrine of individualism, however, is so firmly established in this country that public opinion often finds it difficult to impose artificial restraint on a person whose behavior is actuated by the same sense of personal privilege that lies in the rest of us, even if his actions strike at the very basis of our social equilibrium.

Opinions concerning the incidence of mental defect are somewhat as follows: One feeble-minded in each 250 to 500 of the whole population. The first figure of 1 in 250 was obtained by the British Royal Commission after a very careful investigation in England and Wales, and the second ratio by Massachusetts and Philadelphia. Physicians of the widest experience estimate a ratio of 1 to 250 for the larger part of this country, and, on the more conservative ratio, place the total number in the United States at 200,000, of whom 16,000 are in almshouses, which serve largely as breeding places for defectives, and 18,000 in special institutions. The same ratio gives 2,500 cases in Connecticut, but the census of 1856 placed it at 1 in 259, and it is probable that this ratio obtains to-day, giving a total of 5,000 in the State. In the school population the ratio is given at 1% to 2%; among prisoners, that is convicted criminals, 25% to 50%, being higher in the reformatory group. In regard to criminal heredity, by the way, it is now believed that there is no hereditary criminalism, as such,—what is inherited being a mental

defect that presents a potentiality for criminalistic social reactions. The ratio among prostitutes is 50%, one large group of several hundred carefully examined showing none with an intelligence higher than that of a twelve-year-old child; among paupers, 50%; and among truants, 80%.

Feeble-mindedness, with its congeners, crime, alcoholism, prostitution, venereal disease, and pauperism, lays a heavy toll upon the community. In a typical midwestern village of a thousand souls and of two hundred and twenty homes, Professor Gesell of Yale University found one-half the homes affected by some one or other of the aspects or results of mental defect. Of course this ratio may not obtain universally or even commonly, but every home does bear the tax of feeble-mindedness in some way or another. The State of Virginia estimated last year that it spent six hundred thousand dollars a year directly upon this class and over a million more indirectly and in return was getting a most inefficient management of the problem with an increase of the burden each year. It may be assumed that conditions are much the same in Connecticut and throughout the country. Five or six of the States have deemed the problem worthy of a careful investigation and have attempted to apply rational, economic principles to its solution.

The problem is an old one, but records of scientific handling of it date back less than a century. About the year 1800 cases were first given careful consideration with the idea of educating them up quite or nearly to the normal level, but this goal has been changed to that of minimizing their harm and of increasing their usefulness, while giving them the happiest life consistent therewith. In 1818 a case was admitted to the American School for the Deaf in Hartford, and a careful attempt made at education. About 1850 schools for the feeble-minded were opened in Massachusetts at Barre and South Boston, in New York at Syracuse, and in Pennsylvania at Germantown. In 1855 a Legislative Commission was appointed in this State, in whose work the Connecticut State Medical Society was interested, to make a census of the feeble-minded in the State. This was the first effort of the sort ever undertaken and the work was well

done, and the report was excellent, but it received no effective consideration by the State. Dr. Knight of Lakeville, a prominent and active member of this Society and one of the three members of the Commission, being impressed by the results of his investigations and with the need for state care of such cases, soon after established an institution at Lakeville, known as the School for Imbeciles, where private and State cases were received, both of feeble-mindedness and epilepsy. For fifty years this was the sole provision that the State made for these cases, and there about three hundred of them lived, and that is all that they did do, for there was little or no provision for their education or occupation. In 1913 the State bought this institution, changed its name to the Training School for the Feeble-minded, improved the method of management, and through its Board of Trustees made plans to meet the needs of the State in this regard to better effect. A new school is now being built at Mansfield near the Farm Colony for Epileptics, where the male cases will be cared for, with opportunity for productive labor. At present there are about 200 cases officially on the waiting list for admission to the School and many more which should be under State care. Many cases have been cared for in almshouses, but the law of 1915 makes it illegal to retain them there when proper provision is possible. Several hundred have been in hospitals for the insane and many more are in the prison, county jails, industrial homes for boys and girls, the reformatory, county homes, and charitable institutions. The Newington Home for Incurables, forbidden by statute to receive such cases, has had many such sent to it by the courts. The remainder are found scattered through the schools, in private homes, and on the streets. We have a law forbidding the marriage of imbeciles and of epileptics, and another law permitting their surgical sterilization by vasectomy or oophorectomy.

Governments are beginning to realize that the handling of the feeble-minded is a business problem, which may be colored by sentiment, but which should be solved on business principles. England made an exhaustive study of the subject in 1904 to 1908, and several States in this country have done the same in the past

three years, and the result of these studies is the firm opinion that the State must take cognizance of the whole class of feeble-minded through a central board, with authority to find the cases, to register them, and to arrange for their care, either at home or in institutions. The work of diagnosis and registration should be started in and through the schools and each case should be provided with the best educational training from an economic viewpoint of which he is capable, and later given an opportunity to apply his abilities to the best economic effect. At least 10% of the cases absolutely demand institutional care throughout life, and 30% more should receive such care for the protection of themselves and of the State. Under proper conditions all the males except those of the idiot class can be made partially or wholly self-supporting, earning 30 to 55 cents a day instead of merely costing 50 cents a day, and an equal proportion of the females can perform useful work of some sort. Modern methods have worked out an occupational schedule by which we know the forms of work which can be done to the best advantage by the various grades of defectives. It is reasonable to believe that under a wise policy of control and occupation the institutional cases can do a great deal of benefit to the State by performing work that could not otherwise be done except at a loss, such as reclaiming poor land for cultivation.

We have said that feeble-mindedness can be eradicated by judicious mating, but left to themselves the feeble-minded will not mate judiciously. They bear a large number of illegitimate children and if they marry, they tend to do so in their own intellectual level, thus increasing the liability of feeble-minded offspring. They are said to bear more children to a family than do normal people and if this ratio is not cut down to parity by the known increase in their death-rate, then when we assume that 12% of one generation produces 50% of the next generation, we infer that there is a tendency toward increase in the ratio of feeble-minded. In the old days the selective death-rate or the innate inadequacy of the individual on the one hand, and the general difficulties of life on the other, each, of course, relative to the other and both resulting in the survival of the fit, acted

as correctives to this tendency, but to-day we tend to protect the weaker, less fit strains artificially. This would be well enough and the needs of sentiment would justify it, if we were not at the same time facilitating the propagation of the unfit and thus imposing a progressively increasing burden on the fit.

Dr. Southard recently said that there was no practical problem,—political, economic, or social,—in Massachusetts of more importance than the question of feeble-mindedness, and by “practical” he meant a problem that was susceptible of solution by known remedies after proper study. The New York State Commission expressed the general expert opinion when it stated that such a solution necessitates in main three governmental functions, as follows:

1. The establishment of a uniform scientific manner of diagnosing and registering mental defectives,
2. Institutional provision for the dependent and delinquent defectives so that they may be trained, made socially useful, and prevented from breeding more of their kind, and
3. Adaptation of educational curricula to the special needs of the subnormal who under continuous supervision may possibly become self-supporting and self-respecting.

#### DISCUSSION.

DR. WILLIAM R. MILLER (Southington): This most excellent paper of Dr. Waterman's certainly covers the subject matter and I can add but little to the subject of feeble-mindedness.

My experience has been largely with the delinquent. When you realize that eighty per cent of the delinquents are also feeble-minded you will understand that the study of the delinquent is also the study of the feeble-minded. In the Connecticut Reformatory we make a very thorough examination first socially by a trained field worker who visits the home and brings back with her a detailed history of the conditions in the family, the health of the parents, the habits of the parents, the history of the growing infant, the history of the child in school, and interviews with their pastors and so on. She also returns where it is possible a very complete genealogical chart showing departures in many lines, psychological, neuropathic, feeble-mindedness, crime and so forth. At the same time while the inmate is in the institution he is given a very complete physical examination and a little bit later he is given a very thorough mental examination.

In the mental examination, our average age being nineteen, the Binet test does not apply although I used to separate both the lower and middle grades of feeble-mindedness. But to the higher grade feeble-minded it does not apply because of the environment that he may have been brought up in. The street Arab is a much wiser boy than the one back on the farm although the boy back on the farm may be of a higher grade of feeble-mindedness than the street Arab. Many of the psychological tests are used, and these as Dr. Waterman has said are not standardized, but still we get results which we think are of value. All those in connection with the inmate's record while in the institution, which is in regard to his ability to work, his educational record and the progress he can make in school, give us a very clear picture of the inmate's ability. At the present time about five hundred inmates have gone through or are within the institution so we have fairly complete records of five hundred, which of course is too small a class from which to draw any definite conclusion, but the percentages of findings are as follows: The subnormal, and by this I take in all classes which might also include mental defectives, make up seventy per cent of the whole. These subnormals may be divided or broken up into the feeble-minded, which make up forty-eight per cent of the whole, and twenty-two per cent which are subnormal. Undoubtedly many of the higher grade feeble-minded are included in the subnormal group but have not been so called. We have about two per cent psychopaths which as a rule we transfer to Middletown.

The Wassermann is made on all these boys. I do not know the relation of syphilis to feeble-mindedness and I am not able to draw any conclusion from the small number of cases. The Wassermann has given a positive in twenty-four per cent by taking into consideration the three-plus and four-plus and disregarding the one-plus and the two-plus. Causatory factors of course are many, alcohol being one of them; syphilis may have something to do with it. The hereditary nature of feeble-mindedness of course is established and we may either segregate or sterilize, one or the other of which must be done, because these people cannot fit in with the law and must become delinquents or town charges. Because of the added expense which in time will become unbearable to the public at large, serious action must be taken.

At present we should examine all school children. The large majority of the boys in the reformatory, fully ninety per cent, are chronic truants, and this truancy is a symptom too large to be overlooked and probably means feeble-mindedness in a great majority of cases; but all school children should be examined and this class tabulated and treated either institutionally or otherwise as it is needed.

DR. GEORGE BLUMER (New Haven): *Mr. President and gentlemen of the Society:* I have been interested in this subject from the administrative standpoint rather than the medical standpoint as a trustee of the school

for feeble-minded. I did not have an opportunity to read the doctor's paper. There are two or three points that have come to mind that perhaps have not been widely enough recognized. In the first place I think his figures show that feeble-mindedness is more prevalent than insanity. In the second place that a very much larger proportion of cases of feeble-mindedness is due to heredity than is the case with insanity. A great many of the causes of insanity are acquired causes whereas a large proportion of the cases of feeble-mindedness are due to direct inheritance. That means of course that it is exceedingly important that these patients, these feeble-minded individuals, should be segregated, particularly the women during the child-bearing age. It is generally stated I believe that the feeble-minded woman is unusually fecund although I have read statements recently that threw doubt on that, and one would I think expect a priori that the infant mortality would be very great among the children of the feeble-minded if they were allowed to take care of them. I think there is probably some exaggeration of the fecundity of the feeble-minded and the fear that is sometimes expressed that it is only a question of time if we don't do something that there will be more feeble-minded than sane is an exaggeration of the truth. Nevertheless, the problem is a very large one, and I think we can truthfully say that in this State it has not been given the consideration which it demands. The number of feeble-minded that the State looks after at the present time amounts to only about three hundred and I should judge as far as we can estimate from the limited surveys that have been made that there must be at least twenty-five hundred or three thousand feeble-minded people in the State, so that the matter is one which is deserving of very serious consideration.

DR. D. L. ROSS (Mansfield Depot): *Mr. President and gentlemen:* I don't know as I can add much further. I am much interested in Dr. Waterman's paper. The matter of prevention, as Dr. Blumer states, is a matter I think that should be brought home to the physicians very generally throughout the State, because in that direction the State has not been as vigorous as it ought to have been, and the assistance of the physicians is certainly desirous. The prevention of these cases is a very important point and the only way we know of preventing them to a definite extent would be segregating these people in an institution. There may be other methods but it is the only workable method that we have at present. I hope that in the years to come a great many more of these people will be segregated in these institutions to prevent the production of more and more feeble-minded. There isn't any doubt that heredity plays such a strong part and it is the more normal, the one that reaches the almost normal mental condition, that is the dangerous patient.

The idiot is not so dangerous as far as producing his kind as is the higher grade feeble-minded. The higher grade feeble-minded women marry

with feeble-minded. They are not apt to marry with those of normal mental conditions and they beget their own kind.

As regarding the institutions for epileptics with which I am more interested I want to say that recently I made an investigation of special institutions for epilepsy in the United States. There are ten states that have opened institutions for epilepsy and through correspondence with the superintendents of these different institutions I found that the percentage of patients in these institutions that suffer either from feeble-mindedness or possibly more frequently from mental deterioration amounts to ninety-nine and seven-tenths of the inmates. That is, ninety-nine and seven-tenths, almost the total number, in special institutions for the epileptic show mental deterioration or mental enfeeblement of some kind or other. In these, in only seven per cent was the mental deterioration said to be small in amount. The troublesome epileptic is the one that is forced into the institution, crowding the others out. It ought to be on the other hand that the better grade of epileptic, if he is going to receive benefit from his treatment, should be admitted. In this State when the institution was opened it was supposed that none but the better grade of epileptics was to be admitted but unfortunately all grades have been admitted, even quite extreme idiots, and I see no way of keeping them out. We have tried to prevent their admission but that hasn't been successful.

## The Roentgen Ray in Gastrology.

W. A. LAFIELD, M.D., BRIDGEPORT.

The Roentgen diagnosis of gastric lesions has now reached a precision that entitles it to the consideration of the general practitioner, internist and the surgeon. My object in this paper will be to place before you some of the Roentgen Ray findings in cases of gastric and duodenal ulcer, and carcinomas; also to study as far as it is possible their relationship to the clinical and laboratory findings.

The slides that I will exhibit have been made from plates of patients I have examined and in the majority of the cases I am familiar with both the clinical histories and operative findings.

We will consider the general value of this method of examination, determine how constantly in ulcer cases we have dependable signs, how early in the course of the disease these findings appear and what may be the significance of negative findings.

Gastro-intestinal Roentgenology has helped wonderfully in our studies of alimentary anatomy and physiology. In the normal stomach we note great variations in tone and motility. The relative position of the stomach in the abdominal cavity is definitely shown. Two persons may be in perfect health yet exhibit widely varying pictures of tonus, motility and position of the stomach.

Ordinarily the form, tone and the motility of the stomach are in direct relation to the habits of the patient. The neurotic type of patient presents the hypertonic stomach, while the asthenic type of patient presents the atonic stomach; all the intermediate types may occur. The hypertonic stomach shows an increased peristaltic activity, its bismuth content is evacuated within two hours or less, while the atonic stomach takes four to six hours longer to evacuate the same carbohydrate meal.

Due consideration then must be given to these variations in the normal stomach before we can come to a clearer conception of our symptom-complexus as elicited by the roentgenogram.

As is generally known, the stomach cavity is not visible by the Roentgen Ray unless it is filled with a solution containing an opaque salt of bismuth or barium and this so-called contrast meal is the foundation for the diagnosis of gastric lesions. The media for the suspension of the metallic salt varies with the operator, buttermilk, potato-pap and gruel being in general usage. The technique of Haudek has become the standard and briefly consists of the following:

On a fasting stomach the patient takes twelve ounces of a carbohydrate meal with which is mixed two ounces of bismuth; he presents himself for examination six hours later. The first plate taken, termed the residue plate, determines the patency of the pylorus and the degree of gastric motility.

The patient then drinks a half glass of water containing one ounce of bismuth in suspension. A plate is taken with the patient standing; this plate is termed the sediment plate and determines the gastric tone and gives us evidence as to the presence or absence of a diverticulum of the lesser curvature or posterior stomach wall.

For the study of the full stomach and duodenum, a pint of buttermilk containing from two to four ounces of bismuth, is given. Now a series of plates of the stomach and cap are made.

So much for the technique.

Our ability to demonstrate a gastric ulcer roentgenologically depends on three factors, the size of the ulcer, its position in the stomach and its depth.

We will now take up, in the order of their importance, the radiological signs of gastric ulcer.

#### *Spastic Contraction of the Stomach Wall at the Level of the Ulcer.*

Spasm of the stomach is usually caused by an ulcer and it may assume various forms; it may be a deep incisura forming the typical hour-glass stomach, it may be a spasm of the pylorus alone or it may involve a whole segment of the stomach wall.

The incisura occurring in the plane of an ulcer must be differentiated from the hour-glass stomach from extrinsic causes and this is comparatively easy; the spasm occurring from extra gastric irritation readily disappears with the administration of physiological doses of belladonna.

#### *Gastric Retention.*

Not the result of pyloric stenosis but of pyloro-spasm that either comes from the direct irritation of the ulcer near the pylorus or reflexly from an ulcer away from the pylorus.

The residue of pyloro-spasm is to be differentiated from the residue of the atonic stomach and a careful study of the lack of tone and the absence of peristaltic activity of the atonic stomach will usually be sufficient to make the diagnosis very evident.

### *Pyloro-spasm.*

This is considered to be a spasmodic contraction of the pyloric ring, caused by reflex nerve stimulus, having its origin from certain toxic disturbances, from liver and gall-bladder disease, renal colic and appendicitis. The differential diagnosis of this condition makes the serial examination of the entire intestinal tract imperative.

### *Nichen Symptom.*

The accompaniment of the penetrating ulcer and the Roentgenologists most dependable sign. In describing this finding it may be well to call attention to the fact that in this lesion the ulcerative process has extended through both the mucosal and muscular coats of the stomach and caused a balloon-like projection of the serous coat; to this diverticulum has been given the name of the "Nichen-symptom of Haudek."

An association finding with the nichen is the spastic contraction of the gastric wall at the point of the ulceration and it is this incisura that often first calls our attention to the nichen. From my observations, I have come to the conclusion that the depth of the incisura is a guide to the activity of the ulcer.

### *Callous Ulcer.*

The indurated callous ulcer is usually found at or near the pylorus, and is associated with a partial or complete stenosis.

This type of ulcer may be an active or an inactive ulcer; it is always surrounded by an infiltrated area sufficient to make it detectable at operation without opening the stomach. There may be a slight crater in its center but as this ulcer usually involves only the mucosa of the stomach, the pouch-like projection on the wall is not found.

Since it has been proven surgically that the greater per cent of suspected gastric ulcers are anatomically duodenal ulcers, we will include the roentgen findings in duodenal ulcer with those of gastric ulcers. First, let us review the changes that take place in the stomach characteristics in cases of duodenal ulcer.

The stomach is markedly hypertonic, its emptying rate is increased and the character of the peristalsis changes, the waves become deeper and are seen all the way up to the pylorus.

### *Duodenal Ulcer.*

The constant changes in the configuration of the bulbous duodenum itself offers a conclusive finding. A niche or the crater of an ulcer

that persists in a series of plates is characteristic of ulcer; under certain conditions some few of a duodenal series may show an apparent defect in the outline of the cap but in one or more of the plates the entire bulb shows completely filled; this will rule out the possibility of an ulcer. Frequently the deformity seen in the X-ray plate may far exceed the involvement found at operation; this is accounted for by the fact that the duodenum shows the same spastic phenomena that are found in the stomach. The changes in the cap due to gall-bladder adhesions may be differentiated from those caused by duodenal ulceration by the fact that they usually occur on the gall-bladder side of the bulbous, and the cap is anatomically correct. Duodenal irritability, the result of ulceration, causes a reflex stimulation of the intestinal motor nerves. This gives rise to a marked intestinal hypermotility. Under normal conditions, the carbohydrate meal at the end of six hours reaches the hepatic flexure of the colon, in cases of duodenal ulcer the head of the bismuth column frequently reaches the sigmoid within six hours or less.

Following this consideration of gastric and duodenal ulcer we are brought to a very important topic, that of gastric carcinoma.

As the bismuth contrast meal is taken into the stomach the Roentgenologist sees what is really a cast of the stomach interior, a silhouette.

Irregularities in the outline constitute the principal sign of medullary carcinoma. The growth simply by its extension into the gastric wall indents its outline and the bismuth fills in the crevices between these indentations, forming filling-defects.

#### *Carcinoma.*

A scirrhus carcinoma of the stomach does not show these characteristic filling-defects. In this type of growth the entire wall is infiltrated, it shrinks in size and there is a complete absence of peristalsis.

Stenosis in the medullary type of cancer is a fundamental sign while in the scirrhus variety we do not have even a partial stenosis of the pylorus, on the other hand the pylorus is gaping and the bismuth meal runs rapidly through. I have seen the stomach with the scirrhus cancer completely evacuated within twenty minutes.

In just these two conditions the advantage of the Roentgen Ray method over the ordinary clinical methods is well demonstrated; in the medullary cancer the stomach analyses are usually dependable but in the scirrhus type of carcinoma they are of no value.

The absence of peristalsis in that portion of the stomach with the carcinomatous involvement is characteristic and this finding is constant even in the very early stages of malignancy.

I will now present a series of slides of ulcer and cancer cases after which we will proceed to the conclusions that may be derived and to the discussion.

#### SLIDE INDEX.

1. Descriptive cut. Showing hypertonic and orthotonic types.
2. Descriptive cut. Showing hypertonic and atonic types.

#### *Active Gastric Ulcer.*

3. Frazier. Taken during active stages and immediately confirmed at operation. Note deep incisura at ulcer level. Hypertonic stomach.
4. Godfrey's. An active penetrating ulcer, operatively confirmed. Incisura but no residue at the end of six hours.
5. French. Operatively confirmed. Reported as ulcer but at operation thought to be malignant. Autopsy proved to be non-malignant.
6. Anderson. Operated and confirmed.

#### *Callous Ulcer of the Pylorus.*

7. Reitter. Operatively confirmed. Analysis consistent. Note the saddle-shaped ulcer with crater. Gastrectasis, dilated, atonic stomach.
8. McQueeney's. Not operated. Stenosis partial, and the stomach peristalsis responds to stimulation.

#### *Pyloric Stenosis from the Ingestion of Acid.*

9. Lovegrove. Complete stenosis, persists after six hours.

#### *Duodenal Ulcers.*

10. Rourke. Demonstrating normal pylorus and bulbous.
11. Beach. Active duodenal ulcer, operatively confirmed. Note the constant spasm of the cap and the deep stomach peristaltic waves proceeding clear to the pylorus.
12. Mignery. Callous ulcer of the duodenal cap, operated. The saddle-shaped ulcer is constant in the series.
13. Aubrey. Active ulcer of the cap with the deformity that exceeds the actual invasion. The ulcer was located upon the posterior wall of the duodenum and considerably smaller than the plate would infer.
14. St. John. Diverticulum and at operation was found to be caused by extensive peri-duodenal adhesions. This fleck of bismuth persisted in the cap over six hours. Patient clinically was typical of duodenal ulcer.
15. Houston. Extensive gall-bladder adhesions—note stomach residue at the end of two hours. If ulcer, would have been evacuated within two hours.

#### *Carcinomas of Æsophagus.*

25. Riley. Spasm or very early malignancy.
26. Jacobovitz. Extensive wall infiltration.

27. Mullins. Scirrhus type without complete stenosis.
28. Cowells. Stenosis from pressure of aneurism. Confirmed by death.

*Carcinomas of the Lesser Curvature of the Stomach.*

30. Casey. Taken two years ago and the patient, at last accounts, is still alive. Shows the typical hour-glass stomach.
31. Casey. Slide taken at six hours showing retained particle of bismuth in upper pouch.
32. Casey. Taken one year later, shows the niche well marked.
33. Brown. Irregularities in the gastric wall, no visible peristalsis.
34. Brown. Same case one-half hour later shows the penetrating ulcer posterior wall. The gastric analysis was typical of carcinoma but the retention was reflex and not due to pyloric obstruction.
35. Drougee. Carcinoma of the pars media. No stenosis, hence no retention.

*Carcinomas of the Pylorus with Stenosis. Medullary in Type.*

36. West. Operatively confirmed and operated two years ago. Patient still alive.
37. West. Six hour residue plate showing typical filling-defects.
38. Dixon. Operatively confirmed.
39. Deyo. Considered inoperable from a radiographic standpoint. Operated for the relief of the stenosis.

*Carcinomas of the Pylorus without Complete Stenosis.*

40. Parrot. Small pyloric growth without stenosis, patient's age and general condition made operation inadvisable.
41. Rector. Plate of patient that had a twelve hour residue more from atonicity than from obstruction. Growth completely encircled the pylorus; questionable malignancy at time of operation. Simple gastro-enterostomy with apparent cure.
42. Worden. Wall infiltration without marked stenosis. Considered inoperable on account of the extensive involvement.
43. Castalado. Age 29 years. Circumscribed mass without stenosis. Reported as possible benign growth but at operation proved malignant.
44. Sjostrand. Extensive growth near the pylorus without stenosis. Reported inoperable on account of metastases elsewhere.
45. Slide showing three hours' residue in a case of pyloric carcinoma. Note the peculiar funnel shape of the pars pylorica.
46. Slide showing a six hour residue of an atonic stomach. Note the position the stomach assumes and the complete absence of peristalsis.
47. Jewett. Scirrhus carcinoma that involves practically all the stomach wall. Note the complete absence of peristalsis. Stomach was emptied before the patient could get on the table. The only clinical evidence this

patient reported was a distressed feeling after eating and a loss of strength. Died one month from the day of examination.

48. Gaynor. Wall infiltration without stenosis. No marked gastric symptoms.

49. Hebermehl. Cancer of the mesentery. Impingement on anterior stomach wall.

50. Morton. Radiographed in August of last year. Plate is characteristic of a gumma, but the Wassermann was negative. Patient was operated upon last month, and all the abdominal organs seem massed together.

51. Simmons. Carcinoma of the cecum that gave rise to stomach symptoms only. The case proved the value of the full serial examination.

I have endeavored to keep in mind that I have been talking to the physician and to the surgeon, and not to a coterie of Roentgenologists; I have reviewed only the more dependable radiographic findings, purposely omitting many of lesser significance since they are confusing, and among the Roentgenologists themselves, still of questionable value.

I wish to emphasize to you the importance of the early recognition of gastric and duodenal ulcer, since it has been definitely proven that the carcinoma develops upon a preëxisting mucosal defect.

I believe the Roentgen Ray has the advantage over other clinical methods in the differential diagnosis between gastric and duodenal ulcer. The detection of an early degenerative process without the aid of the Roentgenogram is well nigh impossible.

In conclusion let me say it is for the internist to gather together the results of his clinical history, his laboratory findings, and lastly the Roentgen Ray report. It is not in keeping with what a modern diagnosis should be for the Roentgenologist to shoulder the full responsibility of a diagnosis.

## DISCUSSION.

DR. ARTHUR C. HEUBLEIN (Hartford): *Mr. President and Members of the Society:* I am glad to have the privilege of hearing and discussing Dr. LaField's excellent paper and also to see and hear his case reports. One of Dr. LaField's remarks I want to repeat in order to emphasize. "The detection of an early degenerative process without the aid of the Roentgen Ray is well nigh impossible." There is no doubt that very small

cancers may easily be detected by a roentgen method long, long before any classical signs of malignancy develop, i. e., emaciation, palpable tumor, cachexia, obstruction. When these do develop it is usually too late for surgical interference with the hope of a cure. From a roentgen standpoint, the all important question is whether we can recognize a small indurated area be it cancer or a callous ulcer. From my experience with the Roentgen Ray I should say that we always should detect an area in or about the pyloric ring and cap.

In the stomach proper a lesion becomes increasingly more difficult to recognize the greater the distance from the pyloric ring, and it is extremely difficult to detect a lesion of the cardia.

We owe Dr. L. G. Cole of New York a great debt for his original method of serial radiography the development of which has made possible the negative and positive diagnosis of duodenal ulcer and beginning cancer.

The onset of cancer is so insidious, no classical symptoms developing as a rule until all operative hope is gone, that all cases suggesting symptoms of cancer should be radiographed early, for the roentgen method may detect a growth in its incipency when all other methods fail.

Radiographically syphilis of the stomach resembles cancer, therefore patients should not be condemned by the roentgen findings alone but should be subjected to a Wassermann test.

I understand Dr. LaField to say, that a stomach with a duodenal ulcer usually empties within two hours. I want to ask him whether he usually finds this so. In my experience with duodenal ulcer in a large proportion of cases the stomach empties very rapidly in the beginning and later we get a small six hour residue.

THE PRESIDENT: The paper is now open for general discussion. Will any member remark upon the paper? If not Dr. LaField will please close the discussion.

DR. L. M. GOMPERTZ (New Haven): *Mr. President, ladies and gentlemen:* Gastro-intestinal radiology and clinical gastro-enterology bear a distinct relationship to each other. This must be very evident to all of us after listening to the excellent paper of Dr. LaField and witnessing his interesting demonstration of X-ray findings.

In order not to be misunderstood, I want to say at the outset that I am a firm believer in the use of the X-ray in all conditions affecting the gastro-intestinal tract. I believe the X-ray to be a valuable addition to our clinical and laboratory methods of diagnosis.

Many times when we are doubtful about the findings disclosed by the X-ray, more than one series of pictures should be made to determine whether or not these findings are constant. When we remember that we

are dealing with shadows and realize that their correct interpretation is many times exceedingly difficult, the liability to error is apparent. Experience has taught me that the X-ray in gastrology has its limitations and therefore I want to sound a note of warning not to place too much reliance upon its use, without corroborative evidence from other methods at our disposal.

In these days of X-ray enthusiasm, we are apt to discard entirely results obtained from the laboratory and bedside examinations, and by so doing are many times deceived. Not only is this apparent in conditions affecting the stomach and intestines but in reflex irritations outside of these organs, such as the gall bladder, appendix, etc.

Dr. LaField speaks of the diagnosis by the X-ray between ulcer and cancer of the stomach. In cases with pronounced stenosis of the pylorus where motility is impaired, whether it be due to a benign or malignant obstruction, the X-ray plates will usually show such obstruction, but information, such as determining the secretory powers of the stomach, the character of the secretion, the presence of blood, bacilli, pus, etc., cannot be determined by the X-ray, and it seems to me that these data are very essential many times for a differential diagnosis.

In a number of cases where we believed that the shadows had been properly interpreted we were disappointed to find at operation that we were misled by the X-ray diagnosis.

In closing, I would like to emphasize that X-ray examinations should always be made as a part of the general examination, the same as we make clinical examinations. I believe, however, that the information obtained from its use alone, should not be depended upon any more than that obtained from the microscope, the chemical or clinical examinations.

When we realize that team work should be aimed at by the surgeon, the clinician and the roentgenologist, then and only then will the best results be obtained.

DR. W. A. LAFIELD (Bridgeport): In answering Dr. Heublein I would say that the stomach with the stoma with the ulcer on the duodenal cap does empty very rapidly and occasionally I have found a slight residue of bismuth after four or five or six hours. I don't know how to explain that unless it is due to pylorus spasm, the result of duodenal irritability.

## Lessons Learned from the Work of the Past Year.

EVERETT JAMES McKNIGHT, M.D., HARTFORD.

When I found that the Committee on Scientific Work was insistent that I should read a paper upon this occasion I felt that possibly a discussion of some of the conclusions reached as a result of recent experiences in relation to a few conditions of common occurrence might not be out of place.

In cranial injuries there are often symptoms which give positive indications as regards operative interference. There are others, however, where it is quite difficult to decide upon the proper procedure. I have for some time felt that in the majority of these an exploration should be made especially if there is no improvement within a reasonable time. In cases which appear hopeless, conditions may be found which can be relieved. The risk is not great and in many cases recovery will often be more prompt and complete.

Philip K, seventeen years old, while coasting on January 4th of this year, ran into a moving automobile. He was brought into the Hartford Hospital, a distance of fourteen miles, arriving at 10:45 P. M., and immediately seen by my assistant, Dr. Lampson. There was a lacerated wound on the left side of the head, a little above the ear, extending backwards a few inches and slight bulging of the left eyeball. There was a multiple, compound, comminuted fracture of the lower jaw and a comminuted simple fracture of the left humerus. He was unconscious and had Cheyne-Stokes respiration. Both pupils were contracted and did not react to light. Abdominal reflexes present. Knee jerks absent. There was no Babinski, clonus nor cremasteric reflex. There was considerable mucus in the throat and the chest was full of bronchial rales. Pulse 80, temperature 101. He was seen by several members of the staff and operation was not advised. The next morning there was no improvement and as his breathing

and general appearance were much worse the case seemed hopeless. While there was no evidence of serious compression it was apparent that there had been some injury to brain tissue or meninges. An exploration was made at noon. Temperature at that time was 99.7, pulse 90, blood pressure 170. An incision was carried from the anterior end of the wound toward the angle of the eye and a flap turned down. An undepressed fracture was found running longitudinally about one half inch above the ear. A trephine opening was made just above the fracture posterior to the ear. Some thin clots were found on the surface of the dura. Pulsation could not be seen but could be felt. Another trephine opening was made three inches anteriorly to the former under the temporal muscle and the opening enlarged with rongeur forceps. Nothing but a few thin clots found. A small opening was made in the dura through the posterior trephine opening from which a dram or more of serum flowed out after which pulsation could be readily distinguished by the eye. There was apparently no depression at any point of the fracture. Incision closed with rubber tissue drainage. His condition remained very serious until about 6 P. M. when there was slight improvement. On the next day improvement was more marked and he made an excellent convalescence and at the present time is entirely free from any sequelae.

During the year from March 1, 1915, to March 1, 1916, the number of breast tumors coming to operation in private practice and on my three months' service at the Hartford Hospital was less than usual; only twenty-six. Eleven or 42 per cent were malignant; fifteen or 58 per cent benign.

The proportion of benign tumors of the breast has been very much increased during the last few years, showing that through education women are consulting the physician for these conditions at an earlier date than formerly when they can be removed before there has been malignant degeneration. I believe we should consider every tumor of the breast of whatever nature, every case of chronic mastitis, except in young women under 28, as a potential cancer only requiring some excessive or abnormal stimulus for its development.

Moullin of London in an article on The Classification of Tumors (*Annals of Surgery*, March, 1916, page 257), recently said, "There is no such thing as a separate class of malignant growths. No hard and fast line can be drawn between them and other growths. Malignancy is an occasional feature of all classes of tumors, even of those that enjoy the best reputation; and it is not uncommon for a tumor, to all appearance non-malignant, to increase slowly in size for years, or even to remain stationary for a time, and then suddenly to change its character and destroy life in the course of a few months."

I think the statement cannot be controverted that cancer is primarily a local disease and that in the breast it usually develops from some preëxisting chronic mastitis or tumor. I feel that many physicians do not even now recognize the danger of dilly-dallying with these cases.

The fact that the mass is movable upon the underlying muscle and under the skin is not positive evidence that it is not malignant for many carcinomatous growths are freely movable. The absence of pain should not be taken as a favorable symptom for pain is usually absent in early carcinoma. While cancer usually occurs as a single nodule the fact that two or more nodules can be felt should not be taken as evidence that there may not be a malignant degeneration in one of them. The tumor is there and though apparently benign, the chances are that at some time, no one can tell when, it will insidiously be transformed into an active malignant growth when removal may be too late for a permanent cure.

Proper action on the part of the attending physician in the direction of each case and the education of his patients, aided by popular articles in the public press, should so increase the percentage of benign growths coming to the surgeon that in a short time carcinoma of the breast should be a surgical rarity.

During the past year I have seen several cases of mastitis which were unquestionably due to pressure against the top of the modern corset. All of these women had pendulous breasts which hung over the upper edge of the corset, the pressure of the outer clothing and the weight of the breast causing continuous trau-

matism. Fortunately most of these were seen early and were relieved by removal of the cause and proper support of the breast.

While there are some exceptions we can lay it down as a rule that tumors of the breast do not disappear except by surgical intervention. Where there is a well grounded suspicion of malignancy and the patient is in the cancer age, immediate radical operation should be the rule. In other cases I feel that removal of the mass for immediate microscopical examination by frozen section is the proper procedure as I believe that this can be done without danger of dissemination.

The primary incision should always be so planned that in case radical operation is advised it can be tightly closed and the incision for the subsequent operation made through different areas. Before closing the primary incision if further work is to be done it is well to swab out the cavity with Harrington's solution to destroy any cells which may have been set free. Some prefer to remove the section for examination with the cautery knife. Bouvé of Washington makes the incision with a scalpel and cauterizes the edge after each cut. If the result of the examination shows no necessity for proceeding further he cuts away the charred edges and closes the wound.

In no case should any tissue be removed for examination unless everything is in readiness for an immediate radical operation. In this connection I desire to say that I know of no better service which those philanthropically inclined can render humanity than by the endowment of well equipped and well conducted pathological laboratories in connection with our general hospitals.

The work of Handley in calling attention to the dissemination of cancer through the deep fascia in all directions from the growth will be of immense value in enabling us to markedly reduce the percentage of recurrences after operation.

I desire to call your attention to one case of cancer occurring in a small mass of supernumerary breast tissue upon the edge of the pectoral muscle in front of the axilla. The tumor was removed on the service prior to my own, the pathologist's report being carcinoma of the breast. Later I removed the axillary glands and the fascia in the immediate vicinity.

I have seen a few cases of misplaced breast tissue in this locality.

In our series of thirty-seven gall bladder operations there were fifteen cholecystectomies, about 41 per cent, and twenty-two cholecystotomies, in two of which stones were removed from the common duct. The average type of case was unusually bad. I do not recall having ever met with so many serious and difficult cases of this kind in so short a time. In each of these there was a time when operation would have been comparatively easy and it seems incredible that after so many years of success attendant upon early operations these patients should have been allowed to go on without interference.

As regards the choice of operation no hard and firm rule can be laid down except that in a general way every infected gall bladder, provided there is no obstruction to the free flow of bile into the intestine and the patient is able to stand the increased risk, should be removed. Our percentage of cholecystectomies would have been much increased had we removed all gall bladders which we felt should have been removed if possible.

One case upon which I had done a cholecystotomy five years before with the removal of stones had had no trouble until nine weeks before coming to the hospital since which time he had had six or seven well marked attacks of gall stone colic. We found several small stones in the gall bladder which was removed.

At least two of our cases of cholecystotomy have been followed by large herniae although the incisions were closed with the greatest care. I am inclined to the belief that our deep sutures were drawn too tightly. We have been using largely a figure of eight suture, going down through fascia, muscle and peritoneum on one side, up through peritoneum, muscle and fascia on the other side, then going over and coming back through the fascia on both sides. Where the peritoneum is not too tense I believe the suturing of each layer by itself as we do in the lower abdomen is the best procedure. I think very favorably of the Nathaniel Green suture for the peritoneum and posterior fascia.

Two cases had been jaundiced for several months but in both coagulation time was not long and the blood picture was such

that we felt that they could be safely operated upon. Both had considerable oozing after operation and died from shock and hemorrhage. I now feel that they should have been better prepared for operation, preferably by the injection of whole blood which I have found most effective in reducing coagulation time and preventing post-operative hemorrhage. Another death occurred in a woman of fifty-eight years who had presented no marked symptoms until six months before operation. Her blood pressure was 140, diastolic 85, coagulation time 4 to 6 minutes, hemoglobin 60 per cent, leucocytes 19,100 and differential 80-20. As she was steadily growing worse operation was advised. Gall bladder was buried in a mass of adhesions, much thickened and was full of pus with one stone in the fundus and one from one half to three quarters of an inch in diameter in the cystic duct. Pus could be squeezed out from the cut surface of the wall of the gall bladder. The gall bladder was removed with the stones and she made a fairly good temporary recovery but died about four months later apparently from carcinoma. The other death, making four in all, occurred in a woman fifty-one years of age who had had symptoms for seven years. For the last three weeks she had had constant pain with several chills and temperature which was increasing daily. At that time, January 12th, we were postponing every possible case on account of the prevalence of grippe but it seemed necessary that she should be operated upon immediately. The gall bladder was tense and large, and there was one stone one half inch in diameter blocking the cystic duct which was removed with the gall bladder. She died on the fifth day of bronchial pneumonia.

Having had the unpleasant experience in the past of a breaking open of an upper abdominal incision we now leave the sutures in as long as possible and support the incision with adhesive strapping.

Two cases of hemorrhage following gastroenterostomy which have recently come to my notice were both operated upon at the time when we were using the continuous linen suture for the outer row. In one an ulcer of the stomach was excised and the gastroenterostomy done by the late Dr. O. C. Smith, and the other a case of perforated duodenal ulcer operated upon by me, upon

whom later I did the gastroenterostomy. We have every reason to believe that the trouble is due to the linen suture, a portion of which is probably hanging free in the lumen of the gut. For the relief of this condition we shall probably do a Finney operation at the site of the gastroenterostomy and remove the suture. We are now using a few interrupted linen sutures for the outer layer and two rows of continuous fine chromic gut inside.

In two cases of perforated duodenal ulcer, one operated upon by Dr. Lampson and the other by me, gastroenterostomy was not done at the time of the primary operation. It has since been done in the case operated upon by me. It has been my rule not to do the gastroenterostomy at the time the perforation was closed but I see no reason why it should not be done if the case is seen early, and the patient is in good condition. In my case operation was performed fourteen hours after perforation had occurred. There was in the abdomen in addition to stomach contents turpentine and other remedies which had been administered during the day and his condition appeared so hopeless that nothing but closure of the perforation was attempted. I cannot feel that it is safe to allow these cases to go on without gastroenterostomy, although some assert that it is unnecessary unless there are indications of further trouble in the duodenum.

Continued experience only confirms the opinion I have always held that in acute appendicitis operation should be done as soon as possible after the diagnosis has been made. What advantage can be gained by waiting unless there is some marked contraindication I cannot comprehend. When a case comes into our ward at whatever time of day or night if the symptoms are acute with increased leucocytosis especially if there is a high percentage of polymorphonuclear cells, he is operated upon just as soon as the necessary preparations can be made.

The results have been excellent and I know that thereby we have reduced the duration of disability and the mortality rate. In our series of 142 cases many came into the hospital in very bad condition. All of the bad cases recovered, the only deaths being two private cases of interval operation, which died suddenly late in their convalescence from embolism.

During the year I have seen several cases of abdominal dis-

comfort in males, with a suspicion of appendicitis, in which I felt and in which later developments conclusively proved that the trouble was due to the wearing of a tight leather belt or strap to hold up the trousers. Several of these have presented a distinct groove or furrow across the front of the abdomen where the belt had been worn. I have seen so many cases lately in which recovery was prompt and complete after leaving off the belt that I am convinced that this is a very bad practice largely indulged in, however, by members of the medical profession, many of whom are as obdurate and hard to convince as was ever any woman wearing tight corsets.

We have had many cases of ptosis of kidney, stomach and colon in females very much relieved by proper support to the lower abdomen and I believe that this treatment should be tried in most cases before operation is decided upon.

Several cases of adhesions of omentum to old lower abdominal scars have come to operation during the year for relief of symptoms which were mainly referable to the stomach causing suspicion of ulcer. In our early operations for appendicitis we felt it was necessary to bring down omentum under the entire length of the incision which was the cause of many unpleasant symptoms afterwards. I think we should use every effort to prevent adhesions of that tissue in such a manner as to cause traction on the stomach or transverse colon.

I cannot conclude this paper without calling attention to the excellent results obtained in a number of cases by the use of radium at the hands of Dr. Heublein. In several cases of inoperable carcinoma of the uterus the hemorrhage has been controlled and the patient made comfortable for quite a time.

In one case where the scrapings from a curettage a year before application of radium showed presence of cancer and in which when the radium was used there were numerous nodules in the vaginal wall with severe hemorrhages and a constant grumous bloody discharge there is now an apparent recovery nearly a year after the last application of radium.

In fibroids of the uterus where for any reason operation is not advisable radium should be used as it has in the cases under

my care produced excellent results without unpleasant symptoms. It should not be used in cancer where operation can be done but is of value in inoperable cases and as a preventative of recurrences post-operatively.

## DISCUSSION.

DR. DANIEL F. SULLIVAN (New London): *Mr. President, ladies and gentlemen:* I think we are indebted to Dr. McKnight for bringing before us to-day these questions that are so important to the general surgeon. But a short time ago, so short that it is within my memory, cases of head injury were very unique, especially in the smaller communities. To-day with our modern automobile traffic and our modern roadbeds head injuries have become very common. How to handle these is an important question. The older books gave us three classifications usually; we had the fracture with hemorrhage, fracture with concussion, and the fracture with laceration of the brain tissue. There was a sharp line drawn between these conditions. But the more experience we have with head injuries the more we find that these three conditions run into one. The modern books give us very little on the subject and the question comes up now when we do get a case whether we shall decompress it or not. We have all seen cases brought into the hospital with the symptoms of stupor and shock, those patients put to bed and after a period of stupor and excitement gradually improve and get well.

I had an occasion to look over the charts on eleven cases that were brought into our local hospital and I found that two cases that were operated on died and the nine cases that were not operated on got well, some after a more or less stormy illness.

We are told by some of the modern writers that blood pressure, rise in blood pressure, is indicative of hemorrhage either extra-dural or sub-dural. That has not been my experience. The cases that I have seen, the cases that have upon operation proven to have quite a hemorrhage, have not shown increased blood pressure. On the other hand most of them have shown decreased blood pressure. Where we get a depressed fracture or twitching localized symptom there is no question as to what our duty is, but when we find the case that gives us simple stupor, no swelling of the pulse but on the other hand increasing rapidity, then the question comes will we decompress or not. I haven't had enough experience to make up my mind what is the proper course to pursue. It seems to me that decompression if done gently and done with modern instruments will cause no harm and in a great many cases though we find nothing but concussion, it will prevent the so-called, or rather it will relieve the symptoms that come with the so-called wet brain. I believe we have nothing to lose and everything to gain, but I believe we must

do the operation gently. I believe that the old-fashioned method of using the chisel and adding to the patient's shock does more harm than good.

All causes of tumor and lumps on the breast, to me, are a potential source of danger. I believe that they should be removed. We can't all perform the radical operation, we don't all have the advantage and advice of the modern pathologist, and we certainly do not want to remove the whole breast with the axillary glands as we should if it were malignant. My practice is under local anesthetic to remove the tumor mass and subject it to an examination and at a later date if found malignant remove the breast with the axillary gland. I don't follow the full Halsted method. The result has been unsatisfactory. I follow the Murphy method and in ten days generally have a patient up and get a very satisfactory result.

DR. C. C. GODFREY (Bridgeport): Just a word in regard to the doctor's paper which we have all enjoyed so much. One thing I would like to call attention to: in fractures of the skull involving the brain it is always wise to have the oculist examine the eyes and see if you find choked disc.

I would also call attention to the operation of the Percy cautery in cases of malignant uterine disease. I have such a case which came to my office with profuse hemorrhage. She was anaemic, and in bad shape. I had her sent to the hospital and found the vagina full of cancerous growth. We rapidly curetted it out and put on the first cautery. The growth recurred in a couple of months. I used the cautery again and she went along for two months more and then she had a small amount of carcinomatous tissue left. I used the cautery the third and last time and told her to come and see me again in a couple of weeks. She failed to do so. She came into my office this last week and had rosy cheeks and said she had not been feeling as well in years, and I examined and found that there is now only a very small growth and I am going to burn that out to-morrow.

In regard to placing sutures in the upper abdominal peritoneum, they often tear out, and the method the doctor has spoken of is most excellent. I find a very good way is to pass the needle through on the under side of the peritoneum up half an inch and then out, and then I go across to the other side and up and out, and then you can pull up without pulling the peritoneum into shreds as is so often done.

Another thing, in very anaemic patients, especially if they are very fat, it is always wise to prevent the reopening of the wound afterwards, by putting in some deep catgut retention sutures, and you will find that it will pay for the trouble.

DR. A. A. CRANE (Waterbury): If we were to discuss the interesting points that Dr. McKnight mentioned, as the president says we would talk for a week. I confine myself to the handling of wounds in the upper abdomen that Dr. Godfrey spoke of. I have been for two years using transverse incisions in all operations about the duodenum and the gall bladder and stomach and the result is so highly gratifying I should be very unwilling to use any other. The approach particularly to the gall bladder is so complete, the axis is soon found, and the ease of closing is so incomparably greater that the satisfaction has been very great. I have had no trouble in the tearing out of stitches in the peritoneum and I have had no wounds gap.

## The Commoner Irregularities of the Heart.

CHARLES W. GARDNER, M.D., BRIDGEPORT.

The attention devoted to cardiac research during the past few years has resulted in more advance in the physiology and pathology of the heart than in the previous century and it is especially along the line of the arrhythmias that this progress has been made.

The researches of the experimental physiologists, together with the perfection of instruments of precision, especially the galvanometer suitable for taking tracings, have changed our whole conception of cardiac disease. The workers chiefly responsible for this advance in our knowledge are MacKenzie, Wenckebach, Hering, Cushny and Lewis. One needs but a glance at the literature of to-day to judge of the time and energy devoted to the kidney and its function and the heart and its irregularities. Not so long ago an individual with kidney disease was at once placed upon Basham's Mixture; and a patient with cardiac disease was given digitalis regardless of the type of disorder or irregularity. Researches have changed all of this haphazard therapy, and to-day the cardiac arrhythmias are quite accurately classified, and those amenable to drug therapy readily recognized.

We, as general practitioners of medicine, should be able to diagnose, prognose and outline effective therapy in cardiac disease, and, in order to do so it is essential that we know the mechanism of the heart's action and its various irregularities.

I have been unable to avail myself of the advantages of electrocardiographic study, but have worked for some time with the ink polygraph, and have been well repaid for the time spent.

I do not hope that the expert cardiologist will learn anything from my remarks; but those who have been unable to keep in touch with the advances made in this field, will find that nothing short of a revolution has taken place. It will be my endeavor

to present to you in a concise manner a few of the features of cardiac irregularities.

Omitting a description of the primitive cardiac tube and its remains we will proceed at once to the mechanism of the normal beat.

The stimulus for the heart's contraction starts in the small mass of tissue in the region of the superior vena cava and the wave of contraction spreads to both auricles and is transmitted by the auriculo ventricular bundle to the ventricles.

The starting-point of the heart's contraction is known as the sino-auricular node or node of Keith & Flack, and Erlanger terms it "the pace-maker of the heart." The reason for the contraction starting at this point is due to the fact that it is the most primitive and irritable portion, but if for any reason another part becomes more excitable the contraction starts at this new point and the result is an abnormal rhythm. The symptoms associated with heart failure are much the same, no matter what the form of failure.

With definite symptoms of failure as oedema, dyspnoea, orthopnoea, the postmortem findings in the heart may be of such a varied nature that these symptoms cannot be accounted for by any given lesion. How often, in fact, do we fail to find any change postmortem sufficient to have produced cardiac failure. The conclusion must be that the failure is due to the impairment of the special functions of the heart muscle. The weight of reliable evidence tends to support the so-called myogenic or muscle theory of the origin of the heart beat, and it has been of especial advantage in the development of the modern theory of the arrhythmias. This modern theory has been worked out by Gaskell and Engelman and it assumes that the cause of the stimulus to contraction lies in the cardiac musculature itself. Gaskell has demonstrated the heart to possess four special functions, stimulus production, excitability, conductivity and contractility, to which MacKenzie has added a fifth, tonicity. The irregularities of the heart are dependent upon and are classified according to disturbances of these special functions.

Disturbances of stimulus production are responsible for the

largest number and may cause extra systoles, auricular flutter and fibrillation or paroxysmal tachycardia.

An impairment of the conducting fibres causes besides dropped beats, both partial and complete block.

The failure of the contractile function is responsible for alternating beats.

The sympathetic and cardiac ganglia, so far as known, have nothing to do with the various arrhythmias. We have definite knowledge of the vagus and its relation to the abnormal mechanism of the heart. Vagal stimulation may at one time act upon the excitability or stimulus production causing the heart's action to become slower, and at another time or with stronger stimulation the depression may affect the conducting fibres and to such a degree that the auricular impulses are not acted upon by the ventricle.

This uncertain action of the vagus has an important bearing on the diagnosis and treatment of cardiac disease, for with one function of the heart depressed added stimulation may seize upon that particular function and increase the depression.

Of course there are cases of arrhythmias in which a diagnosis is impossible without instrumental evidence, nevertheless these instruments of precision are not indispensable to a correct understanding of most of the cardiac irregularities and many of them can be recognized by means at our disposal, namely, inspection and auscultation. It is obviously impracticable for many of us to take tracings, to say nothing of electrocardiograms, in our routine work. A fair acquaintance with the various irregularities and their most important features should enable us to arrive at a correct diagnosis and should constitute part of a routine examination.

My object will be to bring out salient features and to show how, without any special skill, a diagnosis can usually be made without graphic records.

The age of an individual and the rate of the heart are two important factors to guide us in obtaining a clue to a disordered heart mechanism.

The only frequent irregularity during the first decade is the

sinus type, that is, irregularities produced by extra cardiac disturbances.

Disturbances of stimulus production, i. e., extra systoles, auricular flutter and fibrillation are not common before twenty years. My experience leads me to believe that the cases of extra systoles are more frequent than other irregularities unless we have definite heart failure. With a totally irregular pulse and outspoken cardiac failure, the type found in seventy-five per cent of cases is auricular fibrillation, and when the pulse is regular or interrupted by occasional extra systoles and cardiac decompensation is present, then we are confronted with a disturbance in contractility in most instances.

When the ventricular rate is markedly slow and regular, disturbance in conduction should be thought of.

The possibility of an attack of paroxysmal tachycardia or auricular flutter should be considered when the pulse is *regular* and persistently 130 or over; but if the pulse is irregular and 120 or more, fibrillation of the auricles is probably present.

We will consider more especially the irregularities known as extra systoles, auricular fibrillation, heart block and pulsus alternans, as these four types are responsible for eighty-five per cent of all arrhythmias.

Sinus irregularities are due to vagal disturbances and occur in young persons, on account of the fact that the cardiac, vasomotor and respiratory centers are more readily disturbed than in older subjects; nevertheless they may be found in older individuals when various visceral, emotional and toxic influences render the centers irritable.

Of the different causes, respiratory influences are responsible for sinus irregularities in most cases, and it is found most commonly during the first ten years of life.

We find that the pulse increases during inspiration and slows on expiration, or the reverse may be noted; this is not a fixed condition, but the apex beat corresponds with the pulse, and there are no variations in the strength or size of the pulse wave. Anything tending to accelerate the pulse rate abolishes this arrhythmia.

This form of irregularity calls for no treatment and has no especial significance aside from the importance of recognizing and differentiating it from serious disturbance. This irregularity is practically never seen in seriously damaged hearts.

### *Extra Systoles.*

The simplest form of *abnormal* rhythm is the irregularity called by MacKenzie extra systole, and by Lewis premature contraction. The terms will be used interchangeably in this paper, although, in the strict sense, it would seem more accurate to use the term extra systole, as it is an extra beat, and not a premature one.

An extra systole is the response of the auricle or ventricle or both to a stimulus originating at some focus in the heart remote from the sinus or pace-maker; but where the sinus rhythm is still in control of the heart. These extra contractions may arise from the auricle, ventricle or the connecting fibres; but from a practical standpoint we need not concern ourselves with their different points of origin.

Clinically, this type is encountered in individuals of middle or advanced life and more frequently in males. Among the causal factors are definite heart lesions. A rheumatic history is commonly found; or in young adults excessive smoking may be responsible for their occurrence. And, too, cases under the full influence of digitalis and allied drugs may show this type.

Any increase in blood pressure; or any marked decrease, as in anaemia or faulty nutrition; over-indulgence in eating or drinking, or intestinal intoxication, may produce it.

These extra contractions may occur as an isolated disorder; or they may occur more or less regularly after a definite number of normal beats, as after every other normal beat or every second or third beat. The distinctive feature at any rate is that the pulse is regular aside from these extra beats, due to the fact that the sinus rhythm is in control.

Each contraction of the heart is a maximal one, according to the law of Bowditch, and the strength of the contraction depends

upon the time the heart has rested between contractions, i. e., the amount of energy stored up.

These extra contractions are small, as the heart has rested too short a time to produce a strong contraction, and the amount of work accomplished by them will likewise be small and will depend upon whether they are able to force open the aortic valve, but if the extra beat is of sufficient strength to open the aortic valve an early first and second sound is heard; and so when the pressure fails to open the valve, only an isolated first sound is heard.

The subjective symptoms produced are few, and most commonly the extra beat is not noticed by the patient; but the long pause following may cause some anxiety, or the large contraction following the pause may be observed as a shock to the chest wall. Neurotic individuals frequently complain of palpitation with this irregularity. It is often observed when the patient is fatigued or after retiring at night when the heart is slowed, or after smoking.

This is one of the easiest of the arrhythmias to recognize. If while feeling a pulse which is regular, it is interrupted by an occasional intermission, then the disturbance is due to this irregularity or heart block. By auscultation during the pulse intermission in cases of extra systoles, one or two short sharp sounds are heard followed by a pause, while in heart block sounds may be heard, but not of the nature described.

We have other corroborative evidence by observing the veins of the neck in cases of ventricular extra systoles, as here the auricular and ventricular contractions fall together, making a large venous wave.

Any factor increasing the rate tends to abolish this irregularity, and if by increasing the rate the extra beat disappears it is not caused by intra-cardiac conditions; and the converse is true.

What is the significance of an extra systole and what treatment is to be instituted?

Clinicians have recognized this abnormal rhythm from time immemorial as the intermittent pulse; but its true import is

of recent date, and indeed it may be a question whether we have learned all there is to know about it yet. Every practitioner meets these cases and should be able to recognize them, and be familiar with their significance. Individuals with this irregularity have in the past, and are at present, being handicapped in life on account of the grave prognoses held out to them; they have been made to lead restricted lives, and, most important of all, been subjected to long courses of treatment.

We may then consider an extra systole in an individual with a normal blood pressure and in a heart otherwise normal, as of no especial consequence, as they are of temporary duration and call only for the avoidance of excitement, fatigue, abstinence from alcohol, tea and coffee.

On the other hand, extra systoles occurring in weak degenerated hearts, and in subjects with senile changes, or high arterial pressure may be regarded as an evidence that the ventricle is imperfectly performing its work. In these subjects the abnormal contractions are usually permanent and have a definite pathological significance.

Although the modern tendency is to minimize the seriousness of extra contractions, there is ample evidence that in some cases they are the forerunner of more serious disturbances.

I have recently observed (in a case presenting frequent extra systoles for a period of four or more years) the onset of a more serious disturbance, the totally irregular heart; but this case has other changes, such as thick arteries and hypertension.

Briefly, it may be said that premature beats, extra systoles, call for no restriction in exercise and work, unless there are signs of cardiac failure; and when there is failure the patient should receive the treatment indicated for heart failure and disregard the extra systole. The prognosis should be measured by the signs present other than the extra systole.

Digitalis has no influence upon this irregularity and in fact may produce it, if the heart rate is sufficiently slowed.

### *Auricular Fibrillation.*

The most important of the abnormal rhythms is that due to fibrillation of the auricles. It is of importance on account of

its frequency, seriousness and amenability to treatment. Cushny and Edmunds first suggested the abnormal rhythm ten years ago, and Winterberg and Lewis supported their ideas in 1909 by showing the characteristic evidence with the electrocardiograph. The older writers termed this rhythm *delirium cordis*. Hering wrote of it as perpetual arrhythmia, and MacKenzie considered it a nodal rhythm; it remained for Lewis to prove that the irregular ventricular contractions were responses from a fibrillating auricle. This is a continuously abnormal rhythm, the normal site of stimulus production taking no part in the rhythm; instead the stimulus is produced at many points in the wall of the auricle. When the auricle fibrillates there is no coördinate contraction, the auricle remains in diastole and a close inspection of its surface shows that each muscle fibre is contracting.

The appearance of the auricle in fibrillation may be fittingly compared with the fine tremor seen in the tongue or the muscles of a patient suffering from progressive muscular atrophy. This irregularity is common in males from the second decade to advanced life.

A case presenting this arrhythmia usually has a history of a rheumatic or luetic infection; or there are marked evidences of senile changes. On the other hand, no such changes may be found. It is common in cases of mitral stenosis, and this association is found so frequently that Lewis has termed them as "bosom companions." What few cases I have observed at autopsy have not shown mitral constriction. Valve lesions may or may not be present. Fibroma of the auricles is frequently found and the usual lesions of a myocarditis; while, in addition, Schonberg, Keith and Hedinger have always found lesions at the node of Keith and Flack, i. e., at the sinus. It is a question whether all cases have a distinct myocardial lesion, but from a physiological standpoint the condition corresponds to an excessive irritability of the auricular tissue.

It is not often possible to fix the date of onset of this arrhythmia, and it is usually first discovered during an attack of heart failure. The symptoms directly produced by the irregularity may be no more than a fluttering in the chest and neck or the patient may be conscious of an irregular heart action.

The symptoms vary according to the rapidity of the heart rate. Cases with a pulse rate of 140-160 are usually accompanied by marked failure, while a case with normal rate may have little or no inconvenience.

Auricular fibrillation is not difficult of recognition from the radial pulse, especially when the rate is rapid.

The rhythm is irregular and of a very disorderly type, in fact there is no known condition producing such an irregularity of force and rhythm. The pulse beats vary in size with short pauses; now feeble pulsation, then come stronger beats, indeed no two beats are alike. If the rate is slow, the irregularity is not as readily recognized.

In contrast other types of irregularities have some distinctive rhythm, as we have seen in the sinus type, which depends upon the respiratory phases, and the extra systole interrupting an otherwise regular rhythm. When the rate is slow a suitable method of not only increasing the rate, but serving to differentiate the disorder from other types, is to administer  $1/50$  or  $1/25$  of atropine, or, if practicable, have the patient exercise. This will accelerate the heart and cause the irregularity to become more pronounced. Under the same conditions in extra systoles and heart block with which auricular fibrillation might be confused, the heart steadies itself.

The foregoing evidences reveal the action of the left ventricle, but the right side of the heart furnishes us additional information. Upon inspecting the veins in the neck we find a wave with each carotid beat in place of the single large wave found in extra systoles or the two normal waves. If murmurs have been present before this irregularity sets in, they will be modified when fibrillation of the auricle occurs and the presystolic murmur of mitral stenosis will disappear, as it is due to the auricular contraction.

If the ventricular rate is rapid, murmurs are made out with difficulty or not at all; when the rate is slow or during long pauses in cases presenting advanced mitral constriction, a murmur may be detected during early diastole.

My observation of cases with this irregularity convinces me that the outlook is grave, and I do not recall a case where the

patient was not suffering from one or more symptoms of cardiac insufficiency. While there are records of cases presenting transient attacks with reversion to a normal rhythm, we must remember that this abnormal rhythm occurs in degenerated hearts and the lesions responsible tend to progress. Many factors aside from the fibrillation need to be considered in the prognosis of a given case, as valve lesions, renal lesions, etc., but the inception of this irregularity adds new danger and usually is the beginning of an imminent heart failure. While death usually occurs with a steady advance of symptoms, there are undoubtedly many sudden deaths directly produced by this irregularity.

The readiness with which these hearts respond to treatment is the all-important factor in the immediate prognosis. Cases where the rate is maintained at 100 or above in spite of digitalis tend to exhaust the reserve force, while those responding easily may be able to lead comfortable and useful lives, but always under some restrictions.

It is in the degenerated heart with perpetual arrhythmia that the most favorable action of the digitalis group of drugs is to be obtained. Digitalis owes its reputation to its almost specific action in these cases; not that all cases respond favorably, but when the conducting fibres are not impaired, it acts well. The irregularity does not disappear, but the rate is slowed by depressing the conductivity of the bundle, so that only the stronger impulses reach the ventricle and probably the drug acts by diminishing the excitability of the auricle.

Cameron has shown that digitalis in therapeutic doses increases the tonicity of the heart muscle and tends to prevent overfilling of the ventricle which results from this irregularity. Moreover, Bond has demonstrated that the flow is increased through the coronaries, thus improving the nutrition of the heart muscle. Janeway calls attention to the importance of recognizing early the case of mitral disease in which auricular fibrillation sets in acutely. Here the ordinary symptoms of cardiac failure are not conspicuous.

Before the classical symptoms are present patients complain of dizziness and a tendency to syncopal attacks with very rapid

heart rate. If these cases are recognized before the full picture of the decompensated heart is present, complete symptomatic relief may be obtained in forty-eight hours. Usually, however, we are confronted with the case full blown, and if the pulse rate, or rather heart rate which is our guide, is over 100, the patient should be placed at rest, and digitalis administered.

I believe there is no especial choice in the preparation of digitalis, provided the drug is administered until definite physiological effects are produced, namely, a slowing to 60-70, increased diuresis and in a few cases increased pulse pressure. This is the only irregularity in which digitalis will more or less constantly increase the arterial pressure. It is, however, a difficult procedure to determine the pressure owing to the inequality of the strength of the beats. Occasionally, from digitalis untoward results as gastro-intestinal disturbances may be observed; but rarely has it been necessary in my experience to produce such disturbances. Of course the urinary output will not be increased unless oedema is present. We have no other reliable means of estimating the effects of the drug.

In most cases the pulse rate will be slowed by giving 15 or 20 minims of the tincture three times a day for from three days to a week.

In desperate conditions, with marked cyanosis, pulsating liver, orthopnoea, and rapid pulse, relief may be obtained with strophanthin 1/250 gr. intravenously in 5 to 8 hours. Eggleston has recently shown that favorable results may be had in 12 to 36 hours with digitalis, if an initial dose equal to half the total therapeutic dose is given, say 5 to 15 c.c. This is not a safe procedure unless the patient is under hospital observation.

James and Hart have recently called attention to the pulse deficit in these cases, that is, the difference between the ventricular contractions and the pulse rate at the wrist. Under efficient therapy all of the ventricular contractions should come through at the wrist; and I find it a good guide in treating this arrhythmia.

When the patient is up and about it is necessary to direct his mode of life, restrict his exercise and work, attend to his digestive tract and see that sufficient sleep is obtained; and too, it is

of especial importance that these cases have mental as well as physical rest. Dandy of Baltimore has shown that straining at stool may raise the blood pressure 50 mm.; hence the need of proper regulation of the bowels in these cases. The more or less continued use of digitalis is as much demanded in this type of heart disorder as thyroid extract is in myxoedema.

Many cases are able to determine for themselves when they need the drug, and at times it is advantageous to allow the patient to handle to some extent the remedy. Usually 10 minims of the tincture three or four times a day, with an interval of three or four days in two weeks, will keep the rate below 80. Each individual case must be studied and its tolerance established, lest the effects of the drug may pass the limit and produce coupling, when it should be stopped; as Lewis and others have seen sudden death follow, probably, as MacWilliams has suggested, due to fibrillation of the ventricles.

#### *Auricular Flutter.*

Our latest addition to the cardiac arrhythmias is auricular flutter. In 1910 Jolly and Ritchie first used the term clinically to describe a case where the auricles reached the speed of 300 per minute. This irregularity is now recognized as a fairly common condition, but unfortunately rarely lends itself to recognition without the aid of graphic means.

The lesions giving rise to this type are similar to those producing fibrillation of the auricles, and in fact it may be considered closely related to fibrillation, for in experiment further stimulation causes the heart to pass from flutter to the higher grade.

MacKenzie is certain that many of the cases of paroxysmal tachycardia with regular rhythm are really due to flutter.

I have no experience with this arrhythmia, unless some cases which I have classified as paroxysmal tachycardia are in reality of this type. The chief evidences to be noted without graphic assistance are the usually regular pulse with extremely rapid movements in the jugulars. While the rate of the auricle is exceedingly rapid, 250 or 300, the associated disturbance in the

conducting fibres permits the ventricle to respond to not over one-quarter or one-half the auricular impulse so that the pulse although regular may be fast or slow.

Two striking features of flutter are the associated heart block and the tendency which the flutter has of persisting when once it is established. Fortunately, digitalis is of value here, although not as valuable as in the fibrillating type; the effect is produced by depressing the conductivity, thus slowing the pulse.

In a few cases it has been found that by the proper use of digitalis the flutter may be made to change to fibrillation and upon stopping the drug the heart reverts to the normal rhythm.

### *Paroxysmal Tachycardia.*

Our conception of paroxysmal tachycardia has changed somewhat with the recognition of auricular flutter and at present the opinion is gaining ground that auricular flutter is responsible for paroxysmal tachycardia in many cases. This irregularity is due to a disturbance of stimulus production where the point of production is at a single focus and remote from the normal pacemaker. The pathology does not differ from the lesions found in cases of flutter and fibrillation.

The condition is characterized by attacks in which the pulse suddenly reaches a speed of 150 to 300 per minute, a rate not observed in other conditions, even in grave heart failure.

The ventricle rarely keeps pace with the time set by the auricular impulses and responds to every second impulse, which is similar, as we have seen, to some cases of auricular flutter. These attacks vary in duration from a few minutes to days or weeks, and subside as suddenly as they began. It is important to bear in mind the distinction between the tachycardia of ordinary rapid heart and the clinical condition known as paroxysmal tachycardia.

Lewis calls attention to a feature that differentiates paroxysmal tachycardia from rapid heart as seen in palpitation and excitement, namely, that exercise produces no effect on the rate of the heart in paroxysmal tachycardia. The paroxysm may pass almost unnoticed by the patient or grave symptoms may occur,

depending upon whether the brain is sufficiently supplied with blood and upon the amount of venous engorgement.

Cardiac syncope may supervene in tachycardia due to the diminished cardiac output, as in the slow heart of heart block, for, as Henderson has shown, the ventricles fill to their normal extent only when the rate is moderately slow.

The treatment of an individual in an attack is very far from satisfactory and I do not feel that any of the various remedies which I have resorted to had any influence unless possibly large doses of morphine. Bearing in mind that some of these cases are auricular flutter when the rhythm is regular, digitalis or better strophanthin intravenously may be employed with benefit.

### *Heart Block.*

The types of irregular cardiac action which have so far been described owe their irregularity to disturbances at the site of stimulus production and in a place removed from the normal pacemaker. Normally, the stimulus passes from the auricle to the ventricle along the auriculo-ventricular bundle, the bundle of His; but when there is a defect in the conducting fibres, varying degrees of block are produced.

The early experiments of Gaskell, who produced varying degrees of compression of the auriculo-ventricular ring of the frog and according to the compression caused the ventricle to respond to every second, third or fourth auricular contraction or even cease to respond, have been verified in man by clinical experience.

The simplest type is where a mere prolongation of the interval occurs between auricular and ventricular systoles and a slightly higher grade when an occasional impulse fails to reach the ventricle with resulting dropped beat from time to time. As the defect becomes greater, we find definite ratios between the auricular and ventricular contractions as 2-1, 3-1, 4-1 block.

The highest grade is found when the bundle is unable to conduct any impulse. This is complete block or dissociation, and the ventricle having lost the normal auricular stimulus for contraction builds up its own slow independent rhythm.

While disturbance in conduction may occur at any age, it is especially common in hearts which have been infected by rheumatic, choreic or syphilitic processes, and the degenerative lesions seen in advancing years.

Heart block in the milder grades may be found at the height of or at any time during the acute-infectious diseases. Though possibly more frequently noted in rheumatism, it is also found in diphtheria, pneumonia and gonorrheal infections, and we know too that the digitalis group of drugs may be responsible for higher grades of block. Until recently a lesion in the bundle was considered necessary for digitalis to produce block, but Cohn has shown that the drug may cause block when the conducting fibres are normal.

Lesions, such as fibrous, atrophic, fatty changes or calcification, are generally found in the region of the main bundle. On the other hand, no demonstrable process may be discovered in the bundle in the acute infectious cases.

It is but rarely possible to determine a mere prolongation of the A-C interval unless the systoles of the auricle and ventricle are widely separated, when it is possible to detect a reduplication of the first sound or a double second sound. I have never been able to detect this sign. When the pulse is otherwise regular, but where an occasional long pause is noted and at the apex no sound is heard in the pause, and the disturbance is not associated with respiration, we may be quite certain that the ventricle has failed to follow the auricular impulse.

When the pulse is slow 40-50 and regular, partial block may be suspected, and nearly all hearts beating at 35 or under are affected by complete block, although complete block may be present with the rate faster. Clinically, the signs are sufficient to establish a diagnosis; but it is not often that partial block can be distinguished from complete. The signs necessary to consider a case as block are the slow regular pulse, visible pulsation in the jugular more than double the carotid, and at the apex or near the left sternal margin a faint tick similar to that of a watch. This latter sign is rarely made out with certainty.

Dr. Griffith of Manchester has recently described a valuable bedside test, which consists of an unusual loudness of the first

heart sound when the auricular systole falls at the beginning of ventricular systole. There may be also a periodic reduplication of both first and second sounds. This phenomena when made out is distinctive of dissociation or complete block.

Confusion may arise in differentiating the slow pulse of senile patients or the pulse of vagal origin, as found in cerebral tumors, meningitis, etc., or one of the irregularities as extra systoles. Fortunately, these conditions are easily differentiated from the slow pulse due to disturbances of conduction. Exercise, or any agent tending to increase the rate of the ventricle will have no effect on the ventricular contraction of heart block. On the whole the atropine test is more valuable as it will prove whether the block is due to a neurogenic or myogenic lesion; 1/50 to 1/25 of atropine will not affect the pulse in the myogenic cases.

In the milder grades of block, subjective symptoms may not be present. In many cases symptoms arise due more to the widespread myocardial invasion, i. e., symptoms of ordinary cardiac failure. In higher grades of block the symptoms described by Adams in 1827 are found. These symptoms are caused by insufficient blood supply to the brain when the pulse rate is greatly reduced, or during the standstill of the ventricle. It is during the transition from partial to complete block that the so-called Adams-Stokes syndrome most often occurs, i. e., the period of slowing or stopping for an appreciable time when the ventricle is building up its own inherent rhythm.

I would emphasize the fact that heart block and the Adams-Stokes syndrome are not interchangeable terms. The syndrome may be found during marked slowing in other conditions; as in the long pulse pauses of premature contractions, and the term only includes in its meaning the syncopal attacks and the convulsive seizures which may occur. Cases of heart block may never exhibit the syndrome, and, in fact, probably most cases do not have them.

With any disturbance in conduction we may feel certain that the heart muscle as well as the bundle has been invaded by a destructive process. The prognosis depends quite as much upon the injury to the myocardium as the conducting fibres, for death frequently occurs in a gradual manner with the usual symptoms

seen in failure. The milder grades of block are not incompatible with long life and hard work. In the severe grades the prognosis is serious, but depends largely upon the etiological factors responsible for the block, and the frequency of the syncopal attacks. Sudden death is not infrequent, and possibly some deaths ascribed to sclerosis of the coronaries are in reality cases of heart block with the Adams-Stokes syndrome.

When syphilis is the causal factor, the disturbance may subside with treatment, but other causes we cannot hope to remove.

In partial block, rest and atropine over long periods may have a favorable influence and abolish the block temporarily.

When dissociation or complete block is present, no remedy is known that will enable the ventricle to respond to the auricular impulses.

When definite evidences of cardiac insufficiency are present, digitalis is indicated.

### *Pulsus Alternans.*

The irregularity due to the most important and most evident function of the heart, contractility, is rarely with certainty to be made out with instrumental aids. When the pulse is regular in rhythm, but where a large beat alternates with a small one, the disorder is known as *pulsus alternans*.

When found it is associated mostly with marked degenerative changes in the heart or in patients with renal disease and high arterial pressure.

The alternation may occur as a constant mechanism when the pulse rate is slow or during an attack of paroxysmal tachycardia, but more often this abnormal rhythm is discovered following a premature contraction.

The *pulsus alternans* is considered by many observers as far from common, but White has recently reported a large number of cases observed in a few months and his conclusions tend to prove that when cardiac decompensation is present, the alternating pulse is as frequently encountered as the totally irregular pulse, auricular fibrillation. I have been unable to detect it as a very common type, that is, as a continuously abnormal one, but have found it frequently following premature beats.

Occasionally it may be possible to detect pulsus alternans by palpating the radial or by auscultation over the apex, but these are very untrustworthy methods. Herrick and White consider the sphygmomanometer method a reliable means of diagnosing this rhythm, when the alternation is constant, but the liability of error is considerable in cases where the alternation is present only following premature beats.

Patients presenting this abnormal rhythm do not suffer from any symptom not seen in other types of cardiac failure.

It is to be hoped that more extended observations of the kind White has made may be carried on and that this rhythm in the future may be grouped with those readily recognized, for when present in an individual, the prognostic significance is of the first importance.

Rarely do cases survive more than two years and 35 per cent of such cases die within a year after this rhythm is discovered.

Favorable clinical results have been obtained with the use of digitalis, although the alternation usually persists and this we would expect owing to the advanced myocardial degeneration.

In conclusion, it is apparent that we are in possession of many facts regarding the irregularities of the heart. We know the etiological factors responsible for them, and we have readily available means for their detection and are therefore in a position to offer a safe prognosis and to outline effective therapeutic measures in many of the irregularities.

We have seen that our sovereign remedy, digitalis, may be responsible for any of the arrhythmias, and in truth the best clinical results may not be obtained unless extra systoles or mild grades of block are produced. It is essential that we recognize the danger signs as well as the full and favorable action of the drug. Briefly, it may be said that digitalis is indicated when the auricles are in flutter or fibrillating or the ventricles dilated and from recent observations with the electrocardiograph, which shows that digitalis has an action on the contractility of the heart even though the rate is not slowed, we may expect in the future that the indications for the use of the drug may be less restricted.

## DISCUSSION.

DR. GEORGE BLUMER (New Haven): *Mr. Chairman, and gentlemen of the Society:* Dr. Gardner has discussed in his paper in considerable detail the recognition of the different varieties of cardiac irregularities by the ordinary means at the disposal of the general practitioner; that is by means of the unaided senses. His description is so complete that I am not going into a discussion of the details of these various forms of cardiac irregularity, but I wish merely briefly to call your attention to two or three general conclusions which I think may be drawn from Dr. Gardner's paper and from the work which has been done in recent years in connection with the accurate study of cardiac irregularity.

The first point that I would emphasize in connection with this work is that no man has a right to say that he cannot make contributions to medical knowledge because he is a country practitioner. This fact was emphasized during the last generation by the work of Robert Koch, the discoverer of the tubercle bacillus, who as you know started out as a country practitioner and began his important bacteriological discoveries as a country practitioner. It is again emphasized in this generation in connection with the work on cardiac irregularities. It is possibly known to many of you that the man who has done most to put the graphic study of heart disease on the map, to use a non-technical phrase, is James MacKenzie. I don't mean to give you the impression that he discovered the method, but he took the graphic study of disease of the heart out of the realm of the more or less theoretical and put it on a firm basis, and it is really his work that forms the ground work of the graphic method as distinguished from the electro-cardiographic method in the study of heart disease.

The second point that I would emphasize is that the elaboration of this method here and the use of delicate and costly apparatus like the electro-cardiograph, which requires a great deal of training to properly carry out the manipulation, again emphasizes the fact that at any rate in many instances we have come to a stage in the practice of medicine where it is no longer possible for any one man to grasp every detail. Or to put the matter in another way, we have come to the point where medical diagnosis is going to be a matter of team work, of groups of men, and not of single men.

Practically, and this is the most important point that Dr. Gardner's paper brings out, these accurate studies have put us in the way or enabled us to be able to recognize the common cardiac irregularities as Dr. Gardner says by means of sight and touch and auscultation. I think that is one of the most important effects that these studies have had. There is no excuse for the general practitioner not being able to recognize the type of cardiac irregularity in a large proportion of cases. Of course it is not true that these irregularities can be recognized in all cases by means of

the senses and the stethoscope, but in a large proportion of the cases they can be recognized in that way. My personal experience leads me to believe that the general practitioner is not yet awakened to this fact. Almost every year I see cases supposed to have serious cardiac disease, especially young men who are simply manifesting the ordinary physiological irregularities of the heart.

THE PRESIDENT: The paper is now before the society for further discussion.

DR. WILDER TILESTON (New Haven): I should like to amplify somewhat what Dr. Gardner said about sinus arrhythmia, for he dismisses it in rather a step-motherly fashion. Though it is scarcely an abnormal rhythm, it is frequently mistaken for heart disease. Not long ago I had a boy sent to me because he was told by a specialist that he must not go to the mountains because the altitude would be too great for his heart. He had nothing but the ordinary sinus arrhythmia. This is easily recognized by the manner in which the rate changes; there is a regular waxing and waning of the heart rate, usually dependent upon respiration, and this may be confirmed by asking the patient to take a deep breath, when the irregularity is increased. You will find that during inspiration the heart rate is increased and that on expiration it becomes markedly slower. This form of irregularity is due to vagal stimulation, and in addition to its occurrence in healthy children is often met with in tuberculosis meningitis, and in convalescence from the acute infectious diseases. It is important to realize that it does not seriously interfere with the heart's function.

Extra systoles are frequently due to tobacco. Probably many of you have experienced it yourselves. They promptly disappear on withdrawal of the drug.

With regard to auricular fibrillation I should like to bring out the point that a good many cases live a long period after it sets in. I have still under observation a case in which it has existed six years, and there are cases in the literature which have lasted thirty years. The prognosis here depends chiefly on the condition of the heart's muscle, and on the possibility of long-continued, careful treatment.

DR. GARDNER: I have nothing to add. I didn't wish to imply in this paper that auricular fibrillation had a grave prognosis necessarily. I do think that once a rhythm is established it remains continuously irregular so long as the patient survives. At least so far as I know, there are to-day cases of abnormal rhythm but the prognosis is not necessarily immediately grave. Patients do live for many years under suitable restriction.

## The Starvation Treatment of Diabetes Mellitus.

WALTER R. STEINER, M.D., HARTFORD.

The disease Diabetes Mellitus was known to Celsus, but a name was not given to the malady until the time of Aretæus. The latter called it "a wonderful affection, not very frequent among men, being a melting down of the flesh and limbs into urine." He also recognized its chronic nature and stated the "patient is shortlived, if the constitution of the disease be completely established; for the melting is rapid; the death speedy. Moreover, life is disgusting and painful; thirst unquenchable; excessive drinking, which, however, is disproportionate to the larger quantity of urine, for more urine is passed; and one cannot stop them either from drinking or making water. Or, if for a time they abstain from drinking, their mouth becomes parched and their body dry; the viscera seems as if scorched up; they are affected with nausea, restlessness and a burning thirst; and at no distant term they expire." Later, about 500 A. D., the sweet character of the urine was said to have been known to the Hindus, but this discovery is generally credited to Thomas Willis, who writes, "in every case which I have met, and I believe that this holds true for all cases, the urine has differed greatly from the imbibed fluids, as also from any humor which is wont to be generated in our bodies, in that it is remarkably sweet, like a solution of honey or sugar." In 1776 Dobson demonstrated the presence of this sugar in the urine, which Chevreul thirty-one years later showed was glucose or dextrose.

Rollo attempted, in 1797, to lay down the principles of dietetic treatment, which has taxed the ingenuity of many physicians since. For Williamson, Lepine, Von Noorden, Naunyn and a host of others have given us diets which have been useful in partially eliminating or entirely reducing the output of sugar in the urine. Recently, prolonged fasting is a method introduced by Dr. Frederick M. Allen of New York, after many experiments

on animals. It has caused the greatest improvement in our therapeutics of this disease to be brought about since dietetic treatment was inaugurated. It should be emphasized in passing that this method was employed after careful scientific investigation by animal experimentation had shown its feasibility, so its basis is not empirical but placed upon a solid foundation.

Fasting, however, is no new thing in the treatment of diabetics, because it had previously been utilized by investigators of this disease from Naunyn down to Guelpa, but the duration of the fasting was never made long enough to make the patients with this disease sugar free. Not only is the sugar reduced to the vanishing point by this prolonged fasting but acidosis also, even if severe, is lessened, and all classes of patients including the weak and emaciated have generally shown beneficial results from it.

The treatment consists in putting the patient to bed and having him fast until he is sugar free. Two to four days is generally sufficient for this purpose, but the interval has been prolonged, in some cases, to eight or ten days. During this period the patient is encouraged to drink water freely. Tea, coffee and clear meat broth are allowed as desired. If acidosis be present, brandy or whiskey may be used for their food value, as they do not produce glycosuria. If, for example, one ounce of whiskey be given every two hours from 7 A. M. until 7 P. M. food will be given of a caloric value about 800. Its use, however, is not essential. If the case to be treated has been a severe one of long standing or if complications exist, it is frequently better to begin treatment by first omitting the fat, after two days the protein is omitted and finally the carbohydrate intake is halved daily until the amount reaches ten grams, when the fasting begins. For the acidosis, if it be extreme, two drachms of sodium bicarbonate may be administered every three hours during the fasting but in most of the cases this is not necessary.

After the twenty-four hour specimen of urine is sugar-free, 150 grams of five per cent. vegetables are given the patient. These vegetables are thrice boiled, the water for the boilings being thrown away so as to further reduce the percentage of

carbohydrate. Then five grams of carbohydrate are added daily from the list of five per cent. vegetables until twenty grams of carbohydrate are taken. Finally five grams are added every other day, passing upward through the five, ten and fifteen per cent. vegetables, five and ten per cent. fruits, potato, oatmeal and bread until, if no sugar appears, the patient is taking three grams of carbohydrate per kilogram body weight. (See Appendix A.)

When the urine has been sugar-free for two days, protein is added in the form of three eggs and fifteen grams are then given additionally each day until the patient is receiving one gram of protein per kilogram body weight. With the protein in eggs and meat, a small amount of fat is of course included and when the protein tolerance is reached, twenty-five grams of fat are added daily until the patient ceases to lose weight or is given not over forty calories per kilogram body weight.

This of course is only done if no sugar appears in the period which has intervened. If sugar does return before these limits are reached, fasting is resumed again for twenty-four hours, or until the urine again becomes sugar-free. Subsequently the diet is increased twice as rapidly as before, but the carbohydrate tolerance is half what it was previously and an increase of only five grams a week is recommended. If the carbohydrate tolerance be low, it is better to order one fast day in seven, but if the tolerance be higher (e. g. 20-50 grams), then on the weekly fast day five per cent. vegetables and one-half the usual quantity of protein and fat should be given. When, however, the tolerance is between fifty and 100 grams of carbohydrate, the ten or fifteen per cent vegetables are added in addition to the five per cent., while if the tolerance is more than 100 grams of carbohydrate, the amount of carbohydrates should be halved on weekly fast days. Few patients, however, have reached this limit. This is the method for using the Allen treatment as outlined by Dr. Elliott P. Joslin of Boston, in the several articles he has written upon this subject.

I have been able to follow carefully fifteen patients on this treatment which I have employed with beneficial results in every instance, for all of them have become sugar-free and have

expressed themselves as feeling much better after treatment. In starting the cases, I prefer to have them go to a hospital, where they can be under closer supervision, in the initial stages of the treatment. Later they are taught the simple principles to be enforced in the dietetics of this disease. They are instructed also in the test for sugar in the urine, so that they may have a greater personal interest in their elimination of this sugar, by performing the test daily.

The following brief extracts are given of the histories of eight patients treated for diabetes on my medical service, at the Hartford Hospital, during February, March and April, 1916:

CASE 1. M. S., aged 59, female, was admitted on my service, at the Hartford Hospital, on January 29, 1916. The symptoms of diabetes were first noticed six months previously when the patient complained of weakness on slight exertion. Polydipsia was then observed, and later polyuria and pruritus were added as additional symptoms. On house diet she had 8.5% of sugar but, in forty-eight hours, after starvation treatment was begun, she was sugar free. As she lived in the country and I could not see her often, I gave her carbohydrates alone until she showed a trace of sugar when she was receiving eighty-eight grams. Then by halving that amount, I called her tolerance for them forty-four grams and slowly raised up the proteids and fats until March 3, 1916, on her discharge, when she was receiving carbohydrates forty-four grams, proteins seventy-three and one half grams, and fats 120 grams (calories=1550). During her hospital stay she twice showed a trace of sugar but by a starvation day in seven was made at once sugar-free again. She has done very well at her home in Suffield, since her discharge, having had a trace of sugar in her urine on very rare occasions.

CASE 2. J. V., aged 55, female, was admitted on my service at the Hartford Hospital on February 9, 1916. She complained, on entrance, of a pain in her chest and gave a history of polydipsia and pruritus for the past few years. On house diet she had 2.3% of sugar but became sugar-free after two days of starvation. She did remarkably well during her stay in the hospital, being given no subsequent starvation days. By Febru-

ary 23, 1916, she was receiving carbohydrates 65.7 grams, proteins eighty-two grams and fat fifty-eight grams (calories=1113). The proteins and carbohydrates were kept approximately at these figures but the fat was successively raised until on discharge March 25, 1916, she was receiving in all 2368 calories (fat=200 grams). She was still sugar-free when I last saw her on June 15, 1916.

CASE 3. M. G., aged 55, female, was admitted on my service, at the Hartford Hospital, on February 21, 1916. About three years previously, she began to have polyphagia, polydipsia, and polyuria. Within the past year she had lost considerable weight and lately her urine was found to contain five per cent. of sugar. Her lungs upon examination showed dullness in the upper right axilla and right interscapular region, where tubular breathing was audible with a few medium moist rales. The right leg showed the presence of a phlebitis in the external saphenous vein. On house diet, she had 7.1 per cent. of sugar but after four days starvation became sugar-free. The food was then gradually given in increased amount until on March 11, 1916, she was receiving carbohydrates forty-nine grams, proteins seventy-two grams and fats 156 grams (calories=1884). She was starved about one day in seven and remained sugar-free. She left the hospital April 2, 1916, at which time she was receiving carbohydrates forty-nine grams, proteins seventy-two grams and fats 151 grams (calories=1843). Since discharge she was sugar-free until June. Since then her signs in the right lung have increased and the patient has relapsed.

CASE 4. G. F., aged 35, female, was admitted on my service at the Hartford Hospital on March 13, 1916. Her illness began six years ago with pains in her legs. Was treated for diabetes mellitus at the Hartford Hospital, at that time. Since then has had polydipsia and pruritus. I saw her on three occasions, at my office, in 1911, the amount of sugar then being .15 per cent., 1.1 per cent. and 1.5 per cent. Upon her entrance to the Hartford Hospital, at this test admission, she had 5.6 per cent. of sugar. After four days' starvation, she became sugar-free and subsequently was given one starvation day in seven. Her diet was gradually increased until, on discharge, April 26, 1916, she

was receiving carbohydrates twenty-five grams, protein seventy-five grams, fat 100 grams (calories=1300). Since then she has returned to the hospital for an interruption of a pregnancy. Occasionally a trace of sugar is present, but by a half starvation day she quickly becomes sugar-free again.

CASE 5. M. T., aged 49, female, was admitted to the Hartford Hospital, on my medical service, on March 19, 1916. She had had polyuria for some months and had lost ten pounds in weight during the past ninety days. On house diet, she was found to have only 1 per cent. of sugar. Consequently, on account of this small amount, she was not starved but was put on 150 grams of 5 per cent. vegetables the first day, and the diet was then gradually increased as previously outlined in this paper. Upon discharge, April 15, 1916, she was receiving carbohydrates  $58\frac{3}{4}$  grams, proteins sixty-six grams, and fats  $120\frac{1}{2}$  grams (calories=1570). Since then she has been sugar-free, save for one occasion, until June 15, 1916, when she left for a summer outing.

CASE 6. A. M., aged 56, female, was admitted on my service at the Hartford Hospital on March 30, 1916. Her symptoms began four years ago with an itching about her vulva and great thirst. Two weeks ago she began to have pain in the left foot and cramps in both lower extremities. She had 6.3 per cent. of sugar on house diet and after four starvation days became sugar-free. She was very difficult to feed by the Allen method as any slight increase of carbohydrates, proteins or fats frequently caused sugar to appear in the urine. During her stay she was given sixty cubic centimetres of whiskey daily, on account of its food value. Upon discharge April 28, 1916, she was receiving carbohydrates ten grams, proteins forty-six grams, fats  $47\frac{1}{2}$  grams and whiskey 60 cubic centimetres (calories=771). She has done poorly since discharge, sugar being frequently present in her urine.

CASE 7. E. D., aged 58, female, was admitted on my medical service, at the Hartford Hospital, on April 1, 1916. Two years previously, she began to have polyuria as her first symptom. This was followed, five months ago, by polydipsia and pruritus. On house diet, she passed 5.8 per cent. of sugar in twenty-four

hours. After two starvation days, she became sugar-free and so remained until her discharge, April 23, 1916, when she was receiving carbohydrates twenty-five grams, proteins seventy-eight grams, and fats 100 grams (calories=1312). Unfortunately she has been lost track of since her discharge from the hospital.

CASE 8. J. M., aged 42, male, was admitted on my medical service, at the Hartford Hospital, on April 15, 1916. For the past two years, he had had polyuria and nine months ago first noted an ulcer on the bottom of his left foot. He was put on house diet and 3.2 per cent. of sugar was found in his urine. In two days he became sugar-free and so remained during his hospital stay. His ulcer on his foot soon healed. He was discharged April 29, 1916, at which time he was receiving carbohydrates twenty-five grams, proteins seventy-five grams and fats 100 grams (calories=1300). Upon his return to his home in New Hampshire, he took up his work again as a laundryman and on June 12th writes he is still sugar-free. His diet has been gradually increased to about 2500 calories daily. He has kept his hospital weight.

All of the patients save 1 and 7 showed no acetone or diacetic acid in their urines, on entrance to the hospital. The former had a moderate amount of both acetone and diacetic acid, while the latter showed a trace of diacetic acid. All of them by starvation later developed acetone and diacetic acid but not in marked amount.

#### APPENDIX A.

Copy of a chart by Dr. E. P. Joslin for the preparation of a diet for the diabetic and calculation of its caloric value.

STRICT DIET.—*Meats, Fish, Broths, Gelatine, Eggs, Butter, Olive Oil, Coffee, Tea and Cracked Cocoa.*

#### FOODS ARRANGED APPROXIMATELY ACCORDING TO PER CENT OF CARBOHYDRATES.

5%		10%	15%	20%
Lettuce	Brussels	Pumpkin	Green Peas	Potatoes
Cucumbers	Sprouts	Turnip	Artichokes	Shell Beans
Spinach	Water Cress	Kohl-Rabi	Parsnips	Baked Beans
Asparagus	Sea Kale	Squash	Canned	Green Corn
Rhubarb	Okra	Beets	Lima Beans	Boiled Rice

5%		10%	15%	20%
Endive	Cauliflower	Carrots		Boiled
Marrow	Egg Plant	Onions		Macaroni
Sorrel	Cabbage	Mushrooms		Prunes
Sauerkraut	Radishes			
Beet Greens	Leeks			
Dandelion	String Beans			
Greens	Broccoli			
Swiss Chard				
Celery				
Tomatoes				

Ripe Olives (20% fat)	Lemons	Apples	Plums
Grape Fruit	Oranges	Pears	Bananas
	Cranberries	Apricots	
	Strawberries	Blueberries	
	Blackberries	Cherries	
	Gooseberries	Currants	
	Peaches	Raspberries	
	Pineapple	Huckleberries	
	Watermelon		

Butternuts	Brazil Nuts	Almonds	Peanuts
Pignolias	Black Walnuts	Walnuts (Eng.)	
	Hickory	Beechnuts	
	Pecans	Pistachios	40%
	Filberts	Pine Nuts	Chestnuts

Unsweetened and Unspiced Pickle, Clams, Oysters, Scallops, Liver, Fish Roe. Reckon available carbohydrates in vegetables of 5% group as 3%, of 10% group as 6%.

(30 grams 1 oz.) Contain Approximately	Protein G.	Fat G.	Carbohydrates G.	Calories
Oatmeal, dry weight .....	5	2	20	110
Meat (uncooked, lean) .....	6	3	0	50
Meat (cooked, lean) .....	8	5	0	75
Broth .....	0.7	0	0	3
Potato .....	1	0	6	25
Bacon .....	5	15	0	155
Cream, 40% .....	1	12	1	120
Cream, 20% .....	1	6	1	60
Milk .....	1	1	1.5	20
Bread .....	3	0	18	90
Butter .....	0	25	0	240
Egg (one) .....	6	6	0	75
Brazil Nuts .....	5	20	2	210
Orange or Grape Fruit (one)	0	0	10	40
Vegetables, 5 & 10% group ..	0.5	0	1 or 2	6 or 10
Oysters (six) .....	6	1	4	50

1 gram protein,	4 calories.	1 kilogram—2.2 pounds.
1 " carbohydrate,	4 "	30 grams (g) or cubic centimeters
1 " fat,	9 "	(c.c.)—1 ounce.
1 " alcohol,	7 "	A patient "at rest" requires 25 to 30
6.25 grams protein contain 1 gram		calories per kilogram body weight.
nitrogen.		

### APPENDIX B.

A list of some of the more important references on the Starvation treatment of Diabetes Mellitus:

Allen, F. M.: Studies concerning diabetes. Jour. Am. Med. Ass., 1914, LXIII, 939-943.

Allen, F. M. Note concerning exercise in the treatment of severe diabetes. Boston M. & S. J., 1915, CLXXIII, 743.

Allen, F. M.: Treatment of diabetes. Boston M. & S. J., 1915, CLXXII, 241-247.

Allen, F. M.. Prolonged fasting in diabetes. Amer. J. M. Sc., 1915, CL, 480-485.

Bookman, A.: Allen treatment in diabetes mellitus. N. York M. J., 1915, CII, 1240-1242.

Friedenwald, J. & Simbaugh, L.: Allen treatment of diabetes. Interstate M. J., 1916, XXIII, 73-79.

Hamburger, Walter W.: Allen treatment of diabetes. Medical Clinics of Chicago, 1916, I, 1051-1075.

Heyn, S. G. & Hawley, P. R.: Allen treatment of diabetes mellitus. Lancet-Clinic, 1915, CXIV, 42-95.

Heyn, S. G. & Hawley, P. R.: Case reports of diabetes mellitus treated by the Allen starvation method. Lancet-Clinic, 1915, CXIV, 553.

Hill, L. W. & Sherrick, J. L.: Report on the Allen treatment of diabetes. Boston M. & S. J., 1915, CLXXII, 696-700.

Joslin, E. P.. Present-day treatment and prognosis in diabetes. Amer. J. M. Sc., 1915, CL, 485-496.

Joslin, E. P., Brigham, F. G. & Horner, A. A.: An analysis of fourteen cases of diabetes mellitus unsuccessfully treated by fasting. Boston M. & S. J. 1916, CLXXIV, 371-425.

Kellogg, J. H.: Guelpa's discovery. N. York M. J., 1916, CIII, 583-585.

Levy, L. H.: Diabetes, the complications and treatment; the Allen plan. N. York M. J., 1915, CII, 1192-1195.

Stengel, A., Jonas, L. & Austin, J. H.: Treatment of diabetes mellitus with special reference to Allen's method. Penn. M. J., 1916, XIX, 283-287.

Paley, S. H.: Allen treatment in diabetes. N. York M. J., 1916, CIII, p. 159-161.

NOTE.—Since this article was written Joslin's book on the "Treatment of Diabetes" has appeared, which is the best exposition on the starvation treatment of diabetes which has as yet been published.—W. R. S.

## DISCUSSION.

DR. GEORGE BLUMER (New Haven): *Mr. President and gentlemen of the Society*—I am very sorry that Dr. Tileston had to go because I asked him to get together our experience in the New Haven Hospital of the starvation treatment of diabetes, and I am not as thoroughly prepared to discuss the matter as he is. I have, however, some general impressions regarding the treatment which I will offer for what they are worth. Of course general impressions sometimes are not worth very much.

We have had under treatment in the past couple of months some seven or eight cases of diabetes by this method and have only lost one, a man who entered in the advanced stages of pulmonary tuberculosis with diabetic coma. He never came out of the coma and could hardly be regarded as a fair case. In the remainder of the cases we decidedly have the impression that this treatment is the most satisfactory treatment that we have ever used in getting rid of the sugar. Even then in most instances it does not have the effect that one might expect from the old literature in which one frequently finds statements to the effect that starvation promotes acidosis. In fact the older literature states if your patient is in acidosis that it is dangerous to starve them, but that they must be given a certain amount of carbohydrate. We have not found any deleterious effect from starvation so far as acidosis was concerned. On the other hand we have had the experience, as in the cases reported by Stillman, of seeing some mild cases of diabetes that have come into the hospital without any trace of acidosis develop acidosis under the treatment. Where we starved them for some time acidosis developed after a number of days starvation and we started them on the increased diet and it gradually disappeared without any harm to the patient. I simply mention this fact because if you are unaware of it and are using the treatment it might be a possible source of alarm.

We have had one experience which shows that even though you do get the patient sugar-free by the starvation method it does not render them immune from the ordinary complications of diabetes. I refer to the case of a young woman of twenty-five, referred to us by Dr. Phillips. We had a good deal of trouble getting her sugar-free. She went out of the hospital feeling very well. Within a week she had an acute attack of grippe and as not infrequently happens, the acute infection brought on acidosis and she died very promptly before anything that was attempted afforded any relief at all.

DR. LOUIS M. LEVY (New Haven): *Mr. Chairman*, I want to report on the treatment of thirty-four cases by the method of starvation treatment over eighteen months. Of these, five were juvenile, one a girl of thirteen, one of sixteen, one a young man of nineteen and two of twenty-one. Most of the cases were ambulatory cases, that is not confined to bed.

Most of the cases were not as severe as the cases outlined by Dr. Steiner. Three of the cases were on the starvation diet five days and the other cases two to four days. In every one of these cases I was able to get the patient sugar-free and by proper application of diet was able to keep the patient sugar-free.

Even in those cases which in the beginning showed an amount of sugar varying from five to eight per cent, and acid to a marked degree the sugar disappeared. Three of these cases previously were put on the Van Norden diet from three months to a year without getting absolutely sugar-free more than a month at a time.

Very often patients will look upon the loss of weight with a good deal of anxiety. Joslin has shown, and Allen has proven, that the loss of weight is rather in favor of the patient. It has been found that the loss of weight is no great detriment to the condition, but is usually a great benefit to the condition.

Another point I wish to bring out in this connection is in regard to the grapefruit in the five per cent list. I have been given to understand lately that grapefruit contains about ten per cent of digestible carbohydrates, but nevertheless it seems to me that grapefruit seems to be pretty well tolerated by the patients and I give all my patients grapefruit.

I might mention that Frank Billings in a recent book makes the statement that he has used this treatment for eight years. Of course due credit must be given to Allen for the fact that he has worked out this plan by means of a scientific study on animals, study that I understand covers a period of nine years. And on that account due credit belongs to Allen. On the other hand Billings claims that for nine years he and Woodyatt in Chicago used the treatment, keeping the patient sometimes as long as eight days on the treatment and the patient was always benefited.

Regarding complications in this treatment of diabetes I find that the complications will disappear.

In one case a boy of twenty-one with acne and in another case a man of forty-five with a marked pyorrhea, after they became sugar-free the acne in the one case entirely disappeared and in the other case the pyorrhea entirely cleared up.

DR. WALTER R. STEINER (Hartford): Dr. Frank Billings and Dr. Woodyatt made the statement, at the 1915 meeting of the Association of American Physicians, that they had employed the principle of starvation in diabetes before Allen had. It does not seem to me that they had utilized the idea of *prolonged fasting*, which is the chief factor in the Allen Method. In 1910 Guelpa used starvation in his treatment but he did not prolong it sufficiently to make his patients sugar-free. The book on the starvation treatment of diabetes by Hill and Eckman, which Leonard of Boston has recently published, will be a great aid to medical practitioners, who wish to become familiar with this treatment.

MINUTES AND PAPERS  
OF THE  
SEMI-ANNUAL MEETING  
1916.

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## Minutes of the House of Delegates.

On May 19, 1915, the House of Delegates voted "that the matter of coöperating in the financial and business management of the *Boston Medical and Surgical Journal* be referred to the Committee on Publication, and that the Committee be instructed to report at a meeting of the House of Delegates to be held in the fall at the time of the next semi-annual meeting." The House of Delegates met October 14, 1915, at 10 A. M. at the Connecticut Hospital for the Insane at Middlesex. The following were present: Dr. Walter R. Steiner, Dr. W. H. Carmalt, Dr. P. J. Cassidy, Dr. S. M. Garlick, Dr. S. B. Overlock, Dr. Elias Pratt, Dr. G. N. Lawson, Dr. T. F. Rockwell (councilors), and Dr. J. H. Rose, Dr. P. P. Sweet, Dr. O. A. Moser, Dr. W. R. Miller, Dr. E. J. McKnight, Dr. N. A. Burr, Dr. W. H. Crowley, Dr. A. N. Alling, Dr. J. A. Cooke, Dr. N. A. Pomeroy, Dr. J. H. Townsend, Dr. W. Tileston, Dr. F. G. Graves, Dr. W. S. Lay, Dr. C. B. Graves, Dr. G. H. Jennings, Dr. M. V. B. Dunham, Dr. F. W. Stevens, Dr. J. W. Johnson, Dr. F. H. Coops, Dr. Geo. H. Noxon, Dr. J. R. Topping, Dr. R. C. Paine, Dr. J. L. Hamant, Dr. R. Hazen, Dr. C. A. Sears, Dr. J. E. Loveland, Dr. F. W. Walsh (delegates), the President, Dr. Max Mailhouse, and the Secretary, Dr. M. McR. Scarbrough.

The Committee on Publication presented the following report:

At the Semi-Annual Meeting of this Society at Norwich in October, 1914, Dr. Joel E. Goldthwait was present and spoke concerning the change in the editorial and business management of the *Boston Medical and Surgical Journal*. He suggested a plan by which this Society might coöperate. The matter was discussed at a meeting of the Council. In his report to the House of Delegates on May 19, 1915, the chairman of the Council recommended that the matter be referred to the Committee on Publication.

On August 26th, the Committee wrote Dr. Joel E. Goldthwait, one of the owners of the *Boston Medical and Surgical Journal*, asking for some definite information in the matter. Dr. Goldthwait, being away, did not reply until early in October, then stating that if we could give him an idea of the amount of material we would like to print he would give us an estimate.

The Committee then addressed him the following letter on October 6th:

DEAR DR. GOLDTHWAIT:—Your letter of recent date was received. The Committee has instructed me to inquire the following: This Society publishes annually 300 to 400 pages of printed matter, 8 point type. The printing occupying a 4 by 6 inch space not including the page heading and numbering. Can you give us an estimate of the approximate cost of printing in your journal matter filling 100 or 200 or 300 or 400 or 500 pages?

What would be the cost to the Society, per subscription, of supplying to its entire membership of about 1,000, your journal, regularly? For voluntary subscription what would be the price per year, assuming that our Proceedings were printed in your journal? Is there a possibility that your journal would change its name to better represent New England if the State Societies of New England would coöperate in supporting it?

Very truly yours,

M. McR. SCARBROUGH,

*Secretary.*

Dr. Goldthwait telephoned on October 8th, and confirmed his conversation by the following letter:

MY DEAR DOCTOR:—Just a note to confirm our conversation of last evening, in the first place stating that it is our desire to coöperate with your State Society in so far as is possible, and in the arrangements which you may wish to make with the Journal remember that it is our desire to make the undertaking a positively coöperative thing.

Until the Journal has been going longer under the new management it will probably not be possible for us to give the Journal to the Societies for less than the amount now mentioned, namely, for three dollars per member, the price now being offered the Massachusetts Medical Society, the same price being offered to your Society provided the entire membership of a thousand is planned for. If a smaller membership were to be considered the price would have to be proportionately greater. If as time goes on it is possible to print the Journal for less cost, the different Societies would naturally profit thereby.

In regard to the name, as I stated in my talk with you, if we can work out some plan which makes for permanency, we should be perfectly willing to change the name, but that would naturally not be considered until some such permanent plan were elaborated.

Remember that if your Society were to come in, we should expect you to have membership on the Advisory Committee, the Massachusetts Medical Society now having four, your Society having the privilege of the same number, and that this Committee would be consulted by the Journal in all matters concerning its policy. Also that we should expect you to appoint one or two persons who would act as members of the Editorial Staff and would naturally edit the material that would come from your Society.

Very cordially yours,

JOEL E. GOLDTHWAIT

The Committee met Tuesday evening, October 12th, in New Haven and carefully considered the general proposition from all angles. The Committee does not believe the time is hardly ripe for such a step. It recommends that the House of Delegates postpone definite action. Some of the reasons for this decision are the following: *First*, the acceptance

of the proposition would mean an increased annual expense of from two to three dollars to each member of the Society, which the Committee feels the members are not willing to bear at the present time.

*Second*, aside from Massachusetts, no other State Society of New England has as yet joined with the Journal in such a manner.

*Third*, there is no definite prospect at present that the Boston Medical and Surgical Journal will change its name. It did not seem that the Society would be best serving its interests by publishing its matter in the Journal under its present title.

Some of the evident advantages are, *first*, that the members would receive, weekly, a valuable medical journal which, next the Journal of the American Medical Association, is in the opinion of the Committee the best general medical journal published in America.

*Second*, the Society would get the advantages of a State Journal which would keep its members closer together. Also, the business and other matters would be made available at an earlier time than under the present system of the yearly volume.

Signed,

WALTER R. STEINER,  
C. J. BARTLETT,  
M. McR. SCARBROUGH.

On motion of Dr. W. H. Carmalt, it was voted that the report be accepted and the recommendation be adopted.

# Aims of a Modern State Hospital.\*

C. FLOYD HAVILAND, M.D.

*(Superintendent of the Connecticut Hospital for the Insane.)*

No state hospital can achieve the highest success without the active interested support of the medical profession. To obtain such support it is necessary that the profession know and sympathize with the ultimate aims of the institution. Hence the desirability of briefly outlining what are now regarded as the essential activities of a state hospital doing its full duty.

It is not so long since that the public regarded an institution for the insane much the same as a prison. Both were merely places for the detention of social misfits, and the so-called asylum was established with little other idea than the protection of society from the depredations of the insane. It was not until later years that the welfare of the insane themselves became a matter for consideration. Eventually, however, it was recognized that the insane should receive kind, humane care, and the better type of custodial institution was developed. In such institutions patients were kindly treated so far as material conditions were concerned, but medical treatment was limited to the treatment of physical ills. However, during recent years there has been a still further advance. The fact that the lunatic asylums of former days are now commonly termed hospitals, indicates far more than a mere change of name. There has been a complete revolution in the development and administration of such institutions, and instead of places for custodial care, they have now very generally become places for the active treatment of mental disease.

With the knowledge that active treatment of the insane brings results has come a demand that every insane patient be given the benefit of every means of treatment of proven value. To attain such end, most hospitals are still in a process of development, and this hospital is no exception. With the constant

\* Read at the Semi-Annual Meeting held in conjunction with the Semi-Annual Meeting of the Middlesex County Medical Association, at Middletown, October 14, 1915.

necessity of exercising economy, needs can be met but gradually, but that does not mean our efforts to obtain all requisite facilities should ever cease. No insane patient should be allowed to lapse into chronicity because any facility whatever is lacking. The right of the individual sufferer and the interest of society are one in justifying any reasonable expenditure, if thereby an increased number of the mentally sick can be restored, so they can resume their places in the social fabric.

Our problem can only be properly handled by a sufficient medical and nursing force. The organization of the medical work is an important task, and presents difficulties not found in other medical specialties. It is not possible with the insane to place the same relative value on subjective complaints as with the sane, and hence physical examinations must be of an unusually thorough character. Laboratory assistance is often required to clear up doubtful points, and I may parenthetically remark that at this hospital such department of the medical work has been developed to a high degree of efficiency. The clinical laboratory and pathological work is of the utmost importance. We can scarcely expect greater therapeutic advances until by the correlation of clinical and pathological findings we know more of the actual material changes occurring in mental disease. In such connection it should be mentioned that there appears no reason for antagonism between the materialistic trend of thought as regards the etiology of mental disease and the theory of the psychogenic origin of such disorders. A common sense viewpoint would indicate that both factors must be at work. It is well known that psychogenic factors which produce mental disease in one individual may be operative in another without producing disease. It is a question of the nervous soil upon which exciting factors operate. It is theoretically possible that a defective nervous soil, lacking the exciting psychogenic factor, or a psychogenic factor lacking a favorable predisposing soil, may fail to produce mental disease. It is the combination of both which is disastrous.

It has often been said that psychiatry has not kept pace with the advance made in other branches of medicine, but such

criticism is no longer justified. Present day psychiatry is making use of all the methods of research which made possible the advance in general medicine and surgery, while in addition it uses methods of investigation peculiar to itself, they being applicable only to the study of mental phenomena. Such for instance is the psychoanalytic method of Freud; the Binet-Simon test of intelligence; association tests; the scientific study of dreams; the reaction to electrical stimuli, as modified by emotions, etc., all of which are time-consuming, and which require a medical staff of considerable size.

We no longer deem it sufficient to formally classify our patients from a symptomatic or even a prognostic standpoint. In the study of the individual patient there is first the question of the original personality, and the normal reaction of the patient to his environment. So far as possible an idea must be obtained of the patient's life before the mental breakdown, in order to reconstruct the chain of events leading to the final catastrophe, which usually represents the sum total of a constellation of numerous factors. That this is true is evidenced even in the case of exogenous disorders, for, after all, only a comparatively small proportion of alcoholics become insane, and it has been estimated but from four to five per cent of all syphilitics become paretics, despite the large proportion of such cases in our hospital populations.

It is necessary to study all difficulties of adaptation, and the psychic levels at which they appear. A situation easily handled by one person becomes an insurmountable obstacle to another, even when there is no intellectual defect. There is such a thing as psychic inelasticity, and it is necessary for us to learn in a given case just what set of circumstances renders manifest so-called "psychic stiffness." Our duty is not ended until upsetting and underlying trends of thought have been uncovered, and the patient virtually introduced to himself, and made to recognize the dynamic value of his unhealthy mental habits. Mental conflicts must be uncovered and there must be established a proper attitude towards life and its obstacles, all of which is necessary for the mental health of any individual.

It is not only necessary to carefully investigate all symptoms as they appear, but it is also necessary to obtain from every available source information regarding the earliest deviations from the normal, as well as regards the patient's early life, family history, etc. It is in such connection that the family physician often has an advantage over the hospital physician, and we most earnestly ask your assistance in securing all pertinent facts regarding the cases you send us. Only after such exhaustive study of each individual case can therapeutic effort be directed in an intelligent manner and with the hopes of the greatest success. The time-robbing character of a modern mental examination is thus apparent, so it is obvious that more trained physicians are necessary than the laity sometimes thinks are required. We feel that through you physicians such fact can best be made known to the public, in whose interests we are all working.

The general atmosphere of an institution is of therapeutic importance. A patient must be subjected to the right kind of general influences to improve, and such influences imply a pre-dominating medical atmosphere. The hospital in which little medical work is done fails in the performance of its duty to the patients entrusted to its care, and hence to the community which maintains it. Were we still engaged merely in the custodial care of a mass of human derelicts for whom there was no hope, there would be more point to the pleas of economy with which requests for added medical facilities are oftentimes assailed. We are, however, engaged in the work of treating disease, and the average properly equipped modern hospital can show a recovery rate of from twenty to twenty-five per cent of all mental cases committed to it. Without results we would be justified in asking for nothing beyond the mere essentials for custodial care, but with such results possible, a community should not be satisfied with anything less than the best service, which means modern facilities, with increased first cost. It is, however, true economy to make such provisions, as every patient returned to society is not only an actual economic gain, but is no longer a positive economic loss. Whatever shortens a patient's stay in a hospital, lessens

expense. If insufficient funds means inefficient treatment, actual extravagance results.

In the further development of this hospital, we aim to provide facilities so that special indications of any sort may be properly treated. Such indications may mean the employment of some of the various forms of hydrotherapy, electrotherapy, mechanotherapy, massage, or simply special diet. Hydrotherapy, with the aid of individual nursing, attention and occupation, has made restraint no longer necessary in a modern hospital for the insane. It has thus been found possible to abandon not only mechanical restraint, such as strait-jackets, muffs, etc., but to a large degree so-called chemical restraint, or the use of powerful hypnotics, which are, after all, palliative rather than therapeutic. Some physical defect may require the service of specialists, and special provisions for surgical and dental work are required, not that the insane need more surgical and dental attention than the sane, but they certainly need as much. Conditions similar in both should receive the same treatment. There is no special surgery in insanity, except as uncorrected surgical conditions are often constant reflex irritants. Thus gynecology offers a wide field of usefulness among the women insane, and in a similar way the surgical treatment of hernias and hemorrhoids has proven of special value among the men. It would appear obvious that dental work should be prompt and thorough, for one does not need to be insane to become considerably perturbed over an aching tooth.

Sometimes the interest of a demented and deteriorated patient may be first aroused by healthy pursuits and occupations, combined with recreation. Classes in arts and crafts, gymnastic and calisthenic exercises, folk dancing, etc., all have fields of usefulness in such connection. Special instructors are required for this work, as it is primarily intended for those who do not willingly occupy themselves, usually because of emotional inactivity and loss of initiative. Such patients are not to be coerced, but every effort should be made to awaken primary interest and secure the patient's coöperation. It is not only in recoverable cases such work is of value, but in demented cases it is sometimes possible to reëducate to a remarkable degree, thus render-

ing it possible for even chronic patients to assume a small niche in the general scheme of the hospital's activity. The patients are thus happier, and the hospital benefits. All this, however, again makes plain the necessity of a comparatively large proportion of attendants and nurses, as success cannot be attained except through the personal attention of those trained to the work.

The hospital for the insane has a function to subserve in research work. Great as is the advance in psychiatry during recent years, such advance is sufficient only to make us realize the immense amount of work still to be done. For instance, the question is unanswered as to why alcohol acts differently upon different individuals, producing in one a delirium, another an acute hallucinosis, another a paranoid trend, or again a polyneuritic syndrome or simple deterioration. We do not know the especial factor which produces paresis in a fairly definite proportion of syphilitics. By careful study we are now beginning to understand the meaning of functional psychotic reactions in a few individual cases, often finding the psychosis is in the nature of an escape from an intolerable situation, but there are many more cases which with present facilities we are unable to comprehend from such viewpoint, and much work remains to be done. We are just beginning to realize the powerful force of psychic factors in determining the mental condition of either the sane or the insane. In the case recently reported by Bailey of New York, total blindness was established by severe tests, but after its functional character was determined, the man was made to see through psychoanalysis as the only treatment, it being thus demonstrated that the loss of vision resulted from an intense emotional affect connected with a dislike he had formed for his wife.

While, as it is well realized to-day, the care and treatment of the insane is essentially a medical problem, the subject presents a social and economic aspect, which demands a closer relationship between the hospital and the public. We wish to interest the public and the medical profession in our work, believing that only by a sustaining public opinion can we achieve the highest standards and the highest success. The importance of success

in work directed against mental disease is only appreciated when one reflects that not only the happiness but the economic welfare of a community depends upon mental health, which absolutely determines efficiency in any field of human activity. Hence our desire to spread a knowledge of our work, for without such knowledge public interest cannot be expected.

To attack the problem at its source, a preventive system should be developed. It is not enough to deplore the increase of the insane and the necessity of increased hospital accommodations. Now that we know the definite relationship existing between mental disease and alcohol, syphilis and bad mental hygiene, concrete work in prophylaxis is possible. The hospital should be the coördinating center for such work, which can be done in conjunction with all voluntary agencies interested in public and individual health. Could mental cases be discovered and adequately treated in the beginning of their disorders, we know many complete mental breakdowns could be prevented. Hence the desirability of establishing mental clinics in centers of population, especially in connection with state hospitals. Earlier detention and earlier treatment means fewer cases of prolonged hospital support. With the out-door department of a hospital regarded as a place where advice and treatment for so-called nervousness could be obtained, there would eventually result a greater willingness on the part of patients to take advantage of the opportunity, and they would receive treatment when it is of the most avail. Thus would the old asylum idea die for lack of nourishment. Such work should, of course, interfere in no way with the family physician, to whom all cases should be referred who might fail to present psychotic symptoms. It would be hoped that the practicing physician would consult with the hospital staff more freely in such cases regarding the troublesome borderland cases, which so often later become committable cases. With such a broadening of the hospital's activity, it would be easier to inculcate the idea that the mentally diseased are as much sick people as are the sufferers from physical disease, and hence their care properly constitutes a health problem. Thus could the public be made to see the incongruity of placing the

care of the insane pending commitment upon peace officers, when it properly belongs to health officers. If the public realized the pernicious effect upon the acute insane of prison cells and handcuffs, especially when such treatment augments and strengthens existing delusions of persecution, it is certain other provisions would be made.

With the development of preventive work prior to the commitment of patients to the hospital, there should go hand in hand the development of after-care work. A genuine system of parole offers an opportunity for real and direct economy. Only by materially reducing the number of cases to be cared for can there be any financial reduction. If any number of patients now in a hospital can, under proper supervision, be cared for at home, that is clear gain, but to insure proper supervision there is required a real system of medical and social oversight. If a patient returns to the same environment and the same conditions amid which his psychosis developed, there is a likelihood the exciting factors may again become operative, with a recurrence of acute mental symptoms. Hence, a skilled, tactful and resourceful after-care worker is essential. Such an individual can often modify or change environmental conditions, can give advice regarding work, can smooth out family misunderstandings, so pernicious in their effects on recently-recovered mental cases, and as has been repeatedly proven where such work has been well developed, can often prevent recurrences of mental disease. It is unfortunate that preventive work, either before or subsequent to hospital residence, is not susceptible to statistical treatment, for it appears unquestionable that were it so susceptible, the mere element of economy thus revealed would justify such activities.

## Important Points in the Diagnosis of Primary and Secondary Anemia.

JOHN CARTER ROWLEY, M.D.

The anemias and leukemias, to many not accustomed to the use of the microscope, present a perplexing group of diseases, difficult to classify and encumbered with a mass of technical expressions.

The aim of this paper is to explain simply and briefly the causes of some of the changes seen in the blood and to emphasize a few of the points that will help in meeting one of the commonest problems that confront us in the diagnosis of these diseases, the differential diagnosis of primary (or pernicious) and secondary (or symptomatic) anemia.

Most of what I have to say is based on Dr. Richard Cabot's article on diseases of the blood in Osler's "Modern Medicine," "The Blood," Gulland & Goodell, "Examination of the Blood," Poppenheim.

Inasmuch as one of the signs of severe anemia is the appearance of immature, undeveloped ancestral cells in the blood stream, it will be necessary to review the development of these various cells, both red corpuscles and leucocytes.

In fetal life both red and white corpuscles are formed throughout the whole blood-making system, i. e., the bone marrow, the spleen and lymphatic glands. In adult life these different tissues become differentiated or specialized, the lymph glands and lymphatic tissue producing the lymphocytes, and the bone marrow producing the red blood corpuscles and also the granular leucocytes (polynuclear neutrophiles, and eosinophiles and mast-cells). (See chart.)

Most observers are coming to agree that as we trace back each of the stocks, the red cell series, on the one hand, and the leucocyte series on the other, we approach a common ancestor, which is in all probability a round mononuclear cell with basophilic

protoplasm. In the more extreme disturbances of blood formation, whether they affect especially the red cells as in various types of anemia or the white cell series as in the leukemias, we begin to find in the circulating blood, and especially in the marrow, considerable numbers of cells which approach this ancestral type and many which are difficult to assign to either the red cell or white cell series.

### THE WHITE CELL SERIES.

#### (a) The formation of the lymphocytes.

In adult life the formation of the lymphocytes in the lymph glands and lymphatic tissue, the spleen, etc., begins in groups called "germ centres" where cell division is especially active. From the edges of these centres the new formed cells are extruded into the sinuses and are carried into the lymphatic stream and so into the blood current. In the centre of these "germ centres" we have cells closely resembling the large lymphocytes of the circulating blood. Toward the periphery we find cells of a smaller size and with a deeper stained nucleus, cells, that is, which correspond accurately to the small lymphocytes of the circulating blood.

(It is also probable that a small proportion of the lymphocytes are formed in the marrow. Concerning the large mononuclear non-granular variety of cell, nothing certain can be said at the present time, but it is highly probable that a considerable portion of them have their origin in the marrow, others in the endothelium of the vessels.)

#### (b) The formation of the granular leucocytes.

The formation of granular leucocytes, neutrophiles, eosinophiles and mast-cells occurs in the marrow; we find, first, mononuclear cells which later in the course of their development—and usually before they enter the circulating blood—have developed a polymorphous nucleus.

(Mononuclear neutrophiles, or myelocytes, are thus ancestors of the polynuclear neutrophiles; mononuclear eosinophiles are ancestors of the polynuclear eosinophiles. Just what cell represents the earliest type or stage of leucocyte formation in the bone marrow is a point more or less disputed, but most authorities

believe that many of the cells seen in acute lymphatic leukemia represent this ancestral undifferentiated type.)

When there is a call for fresh leucocytes in the circulating blood, the bone marrow sends out first its small store of finished polynuclear cells, but when this supply is exhausted, it sends out the unfinished immature cells of an earlier stage.

### THE RED CELL SERIES.

The red blood corpuscle in the earliest stages of its development in the bone marrow not only has no hemoglobin (its protoplasm being basophile similar to that of a lymphocyte) but it contains a nucleus. This cell is also larger than the fully developed corpuscle of the circulating blood. Later in its development the cell grows smaller, the protoplasm loses its basophilic characteristics, takes up hemoglobin, and before it leaves the marrow loses its nucleus. (Megaloblasts—normoblast.) Whenever we find these immature cells in the circulating blood, we know that in spite of increased activity on the part of the red cell forming tissue, the bone marrow has been unable to meet the demand made upon it and is sending out half-finished cells.

### ETIOLOGY.

With the exception of anemia due to hemorrhage, both secondary anemia and primary anemia are caused by the action of toxins or poisons on the blood and blood-forming tissues. This action results in (1) a degeneration of the red blood corpuscles and, (2) if this process advances, a consequent regeneration on the part of the bone marrow in an endeavor to make up the loss. The degenerative changes are brought about by hemolysis of the red blood corpuscles resulting in the loss of hemoglobin and in a diminution in the number of red cells. The regenerative changes in the bone marrow result in the production of immature cells. The loss of red corpuscles in hemorrhage amounts to the same thing as the destruction of cells by toxins.

In secondary anemia, the source of the toxin is known,—infections, tumors, drugs, intestinal parasites, uremia, purpura, etc. In primary anemia, the source of the toxin is unknown,

but the condition in which we find the blood indicates that the toxin is one of the most powerful; the action of the hookworm and the fish tapeworm and the action of certain drugs only having as powerful an effect.

In both primary and secondary anemia, then, we find degeneration of the red cells resulting from toxins. (I am excluding secondary anemia caused by hemorrhage, but in these cases the hemorrhage is so obviously the etiological factor that it does not interest us in our differential diagnosis. The blood picture following hemorrhage is, however, the same as that of the secondary anemias, due to various toxic conditions.)

In most of the secondary anemias, the signs of degeneration are all that we see. In severe cases, however, where the destruction of the red cells is extensive, the bone marrow is taxed to the utmost, regeneration takes place, and marked hyperplasia of the red cell forming elements is evident; but in spite of it the marrow is unable to manufacture fresh cells as fast as the old are destroyed and turns out immature unfinished cells.

In pernicious anemia the bone marrow has not only undergone hyperplasia, but has reverted to the fetal type, consequently more immature forms are seen than in secondary anemia. In other words, the bone marrow has reverted to a more primitive style of manufacture.

As to etiology, then, the essential difference between secondary and primary anemia is that in the former the source of the toxin, which is usually mild, is known, while in the latter the source of the toxin, which is always severe, is unknown.

To repeat, we have as the result of toxins (1st) degenerative changes in the blood and, (2d) if these changes are severe, a regenerative process of a compensatory nature on the part of the bone marrow. Consequently, the more severe the anemia, the more marked are the signs of regeneration.

#### SIGNS OF DEGENERATION.

1. Diminution in the number of red cells from hemolysis.
2. Loss of hemoglobin, resulting in achromia, also the result of hemolysis. (This is most extreme in chlorosis.)

3. Variation in size of the red corpuscles (anisocytosis). Many of the cells are smaller than normal.
4. Variation in shape (poikilocytosis) (oval, pear shaped, irregular forms).

### SIGNS OF REGENERATION.

1. Variation in the staining of the red corpuscles (polychromatophilia). Some of the cells have a diffuse bluish tinge, others may be dotted with bluish granules (stippling). This tendency of the red cells to take up the basophilic stain indicates a stage immediately preceding the complete disappearance of the basophile cytoplasm. The parent form of the red cell was once entirely basophile in character and free from hemoglobin. In these polychromatophilic cells the basophilic vestiges, then, indicate a stage of immaturity. The cell has been sent out before it has taken up its full share of hemoglobin.
2. An excessive quantity of hemoglobin in some of the corpuscles. A hyperchromasia in contradistinction to achromia, the result of hemolysis.
3. The presence of numerous large sized red cells. (This feature with the increase in hemoglobin in the individual cells leading to a high color index is the most characteristic feature of the blood picture in pernicious anemia (gigantocyte).)
4. Presence of normoblasts. Red cells of about normal size with densely staining nucleus. These are found in all varieties of moderately severe anemia, but not in chlorosis.
5. Megaloblasts. These are large nucleated red corpuscles with a nucleus less dense than that of the normoblast. These are usually found in pernicious anemia and may be seen in severe secondary anemia.

Let me emphasize one point. In the degenerative changes, poverty of hemoglobin, the result of hemolysis, is indicated by achromia (giving rise to a faintly stained pale red corpuscle, characteristic of secondary anemia). In the regenerative changes, there is a compensatory increase not only in the hemoglobin of the individual cells, but in the large size of the cells as well. This is a distinctive feature of primary anemia.

### CHANGES IN THE LEUCOCYTES.

These include a variation not only in the absolute number, but also in the relative proportion of the various kinds of cells. The quality of the leucocytes varies as well, and a few immature forms appear in the blood stream.

Before proceeding to the differential diagnosis, let me say a word about the color index, one of the most important helps in differentiating pernicious from secondary anemia.

The color index is the relative proportion of hemoglobin to the number of red corpuscles. It is determined by dividing the percentage of hemoglobin by the percentage of red corpuscles. One hundred per cent is taken as the normal hemoglobin and 5,000,000, or 100 per cent, the normal number of red corpuscles.

In determining the color index it is not safe to depend upon Talquist paper for estimating the hemoglobin; it is not exact.

With these facts in mind, we are ready to take up separately the blood pictures in both diseases.

*Simple secondary anemia* (resulting from hemorrhage or mild toxemia).

(a) Degenerative changes.

1. Loss in the number of red cells seldom below 1,000,000, usually 2,000,000 to 4,000,000.

2. Excessive loss of hemoglobin shown by achromia (pale red cells) and by a low color index.

3. Change in size of red cells—many cells smaller than usual.

4. Change in the shape of the red cells (not as marked as in primary anemia).

In more severe cases, where there is a reaction on the part of the bone marrow, we may have

(b) Regenerative changes.

5. Variation in the staining properties of the red cells (polychromasia), and punctate basophilia (stippled cells).

6. Normoblasts generally few in number.

7. Megaloblasts. These may be found in the most severe toxic forms of secondary anemia.

(c) Unclassified. Changes not distinctly degenerative or regenerative.

8. Leucocytosis chiefly of the polynuclear leucocytes 10,000 to 15,000 and the presence of marrow leucocytes and an occasional myelocyte.

9. An increase in number of blood platelets.

### PRIMARY, OR PERNICIOUS ANEMIA.

In pernicious anemia remember that the marrow taxed to the utmost shows more evidence of regeneration and has, in

fact, even reverted to the fetal type. So while we still find evidences of degeneration, the immature cells are more in evidence.

We find then

(a) Degenerative changes.

1. Loss in the number of red cells, usually 2,000,000 or less (lower than in primary anemia).
2. High hemoglobin content of many of the red cells. Hyperchromasia and a high color index. (Important.)
3. Change in size (anisocytosis). Many large red cells. (Important.)
4. Change in shape (poikilocytosis). More marked than in secondary anemia.

(b) Regenerative changes.

5. Variation in staining (polychromasia). Stippled cells more prominent than in secondary anemia (except that due to lead poisoning).
6. Normoblasts. Usually in considerable numbers.
7. Megaloblasts. May exceed the number of normoblasts and rarely may not be found at all. Their presence does not necessarily contra-indicate a secondary anemia of severe toxic origin.

(c) Unclassified.

8. Low white count, but a relative lymphocytosis, a few myelocytes may be found.
9. Decreased number of blood platelets.

To sum up, then, we have the following essential differences in the blood picture:

In secondary anemia (achromia), deficiency of hemoglobin in individual cells, many small cells, and a low color index.

In primary anemia (hyperchromasia), an excess of hemoglobin in many individual cells, many large sized red cells, and a high color index.

Change in the shape of the cells is more marked in primary than in secondary anemia.

Few normoblasts and, only in extreme cases, megaloblasts may be present in secondary anemia.

In primary anemia megaloblasts are usually found; their absence does not exclude pernicious anemia.

The white count in secondary anemia is usually high; in primary anemia low.

The blood platelets are increased in secondary anemia and diminished in primary anemia.

As to the differential diagnosis, aside from the blood picture, our first aim is to exclude secondary anemia by searching for

a cause,—either hemorrhage, or toxins, resulting from tumors, infections, drugs and intestinal parasites. The stools should always be examined for blood and ova. The symptoms of anemia are the same in the secondary as in the primary form of the disease. There are, however, a few points that it is well to keep in mind.

Primary anemia is a disease of old age, and especially likely to affect men. In pernicious anemia there is strikingly little loss of flesh compared with what we find in the anemia due to malignant tumors. Primary anemia is also characterized by remissions and may last for years.

In primary anemia the hemorrhages are usually small and not extensive enough to account for the severe blood picture. There is also a history of anemia preceding them. In secondary anemia the hemorrhage precedes the anemia.

#### OTHER DISEASES.

The leukemias are excluded by the finding of lymphocytes or myelocytes in excessive numbers, 50,000 per cmm. or over.

Chlorosis, a disease of unknown origin, is rapidly disappearing. It affects girls fifteen to twenty-five years of age. The color index is extremely low, five per cent, and the corpuscles, while varying scarcely any in shape, are extremely pale and have a punched out appearance.

#### APLASTIC ANEMIA.

This disease usually affects young females. The course of the disease is invariably acute, rarely more than three to four months. Hemorrhages are profuse. The color index is low and nucleated red cells are absent. At post mortem the bone marrow is almost entirely made up of fat, i. e., is aplastic, there has been no hyperplasia or reaction on the part of the bone marrow, as we find in primary and secondary anemia where the marrow is a beefy red.

# The Problem of Diagnosis in Traumatic Conditions Affecting the Kidneys.

*With the Report of Two Cases.*

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The comparative frequency of injuries to the kidneys makes the topic one of considerable interest to the general surgeon as well as to the genito-urinary specialist, and it is from the standpoint of the former rather than the latter that the subject will be presented. It frequently occurs that the family physician is first called at the time of the accident and upon him must rest the primary diagnosis. It is, therefore, very important that he also should be conversant with the symptoms which usually follow such a lesion in order to give the patient the benefit of proper surgical attention as early as possible.

It is surprising how slight the trauma may be which will give rise to kidney injury. This is especially remarkable when we consider its location deep in the posterior aspect of the abdomen, the right kidney resting on the twelfth rib close to the vertebral column, the left usually on the eleventh and twelfth ribs, the pleura above extending down to the twelfth rib. The hilum of the kidney, with the blood-vessels above and the pelvis of the ureter below, lies on the level of the twelfth dorsal vertebra. Injuries to the right kidney occur more frequently than those to the left, due to the fact that it is situated lower in the lumbar region. They are much more common in males than in females because of the more active life led by the former. The very fact that the kidney is placed close to the vertebral column makes the resultant destruction of renal tissue the more complete in case of accident, the bony wall at its posterior aspect accentuating the force of the injury. A rupture of the kidney sometimes occurs from force applied at a considerable distance from the organ, on the same general principle as that extant in fractures

of the skull with laceration of the tissues of the brain at a point quite remote from the actual trauma to the bone. Experimentally it has been proved that whether the pelvis is filled with fluid or not at the time of the injury has a great deal to do with the severity of the lesion. Kuester has made some very interesting experiments to prove this: (1) Taking a kidney from a recently killed animal and dropping in from a height, he found a simple contusion of the cortex; (2) taking another kidney and distending the pelvis with fluid, tying off the vessels and ureter, and dropping the organ in this distended condition from a similar height, the result was a very much more severe laceration.

The kidney is fortunately extraperitoneal; thus the resulting trauma from various falls and bruises does not as a rule result in general peritonitis. The introduction of urine even into the peritoneal cavity does not cause general peritonitis provided this is a very gradual one or occurs at intervals in small amounts. If, however, the flow is constant and in large amounts, the result is peritoneal infection. The type of injuries which may occur varies with the severity of the inciting causes. These injuries may be subdivided as a matter of convenience into (1) those which involve simply the fatty or fibrous capsule without injuries to the parenchyma, though there may be small hemorrhages beneath the capsule; (2) those in which the capsule is torn and there is a contusion of the parenchyma without an actual tear of the renal tissue; (3) where in addition to the tear of the capsule there is actual involvement of the parenchyma (this may consist of numerous radiating tears or small lacerated wounds); (4) tears of the parenchyma which involve the renal pelvis (this usually means eventually a urinary fistula); (5) complete laceration of the kidney with its division into two or more parts; (6) while the actual lesion to the parenchyma is not so great there is a tear of the ureter or of the renal vessels.

Regarding the usual symptoms following kidney trauma, it has been estimated that in 40 per cent of the subcutaneous injuries affecting the viscera, the kidney is the one affected. In 80 per cent of these cases hematuria is a prominent symptom.

It is unquestionably the most important symptom and one which should be looked for in every case involving contusions of the lumbar regions. This hematuria may be slight or it may even be absent. If only the capsule is torn and there is no injury to the parenchyma, blood will not appear in the urine. It must be remembered, however, that blood will not appear in some very severe injuries where the ureter is torn across, especially if this tear is complete. The shock following injuries to the kidney is usually severe, and yet in some instances patients with severe wounds of renal tissue have walked to their homes or even continued with their vocations until weakness from loss of blood forced their retirement to their beds. In some cases there is simply a transient hemorrhage, the patient recovering in a few days. Where the kidney is badly lacerated the danger of immediate death from hemorrhage is, however, great. This is also true where the renal vein or artery is torn. It should be remembered that the passage of a blood clot through the ureter from the pelvis may cause the patient to have a most acute attack of pain a number of days after the accident; also that blood may appear in the urine after even such slight manipulation as renal palpation. The possibility of a traumatic nephritis, too, should be considered after injury to the kidney.

In case there is a tear of the peritoneum, the blood will flow directly into this cavity and the resulting dullness on palpation will be the persistent symptom.

Anuria or oliguria is a consequence which may follow kidney trauma. Even when the other kidney is present and normal, there occurs in some instances a sympathetic decrease in its secretion which at times is nearly complete.

Sepsis is another very important sequence. The escape of urine into the surrounding tissues always presents serious complications. A certain amount can be borne, but in case fermentation occurs, the outlook is always very much more complicated, the tendency being for the tissues to become necrotic and a large abscess cavity to form in the perirenal region; this may extend nearly to the middle line anteriorly and to the anterior superior spine below. There is a gradual absorption of toxic products

into the system, which if not relieved by early drainage will cause the death of the patient. In case the tear has extended to the calyces or into the pelvis of the kidney, there is always the possibility of a urinary fistula forming as a result of the leakage of urine. The usual discharge from such an abscess is pus mixed with urine. The accumulation occurs in case the sinus closes temporarily; and the patients become very much emaciated and very septic until effective drainage is again secured. As a rule, incisions of the perirenal abscess and the insertion of drains are about all that can be done at such a time, though it becomes absolutely necessary occasionally to remove the remnants of the kidney. This is frequently badly lacerated, very adherent, and its parenchyma may be riddled with abscess cavities. In case the peritoneum is torn so that there is a discharge of this gangrenous material or pus into the peritoneal cavity, a septic peritonitis speedily develops and the death of the patient follows. This is a danger to be carefully avoided. Nephrectomy, at any time a serious operation, becomes doubly so when complicated with the extravasation of urine and a large pus cavity. Certain anatomical and pathological conditions must be considered. Primarily you always have to face the possibility of only one kidney being present. It should be borne in mind that the renal artery is longer and the vein shorter on the right than on the left. The shortness of the vein requires particularly careful manipulation in the removal of the right kidney, owing to danger of tearing the vena cava. The vein is so short that the vena cava borders the renal pelvis. Injury to the vena cava has repeatedly occurred in the removal of the right kidney. An interesting point mentioned by Ransohoff is that the left renal vein is joined by the spermatic vein of the same side. A sudden onset of varicocele at an age when the disease is uncommon, calls for an examination of the kidney.

In considering the removal of a kidney for any pathological condition, the following abnormalities must also be borne in mind:—

1. *The Fetal Type.*—At about the tenth week of development the surface of the kidney becomes marked by shallow depressions

into lobes, of which there are about eighteen. This lobulation in the course of normal development persists until birth, when it gradually disappears. When the adult kidney presents lobulation on exposure, its surgical significance is unimportant.

2. *The Cystic Kidney*.—The tubules of the kidney are formed by the union of two distinct structures. It is possible that in certain cases there may be failure of this union. The secreting portions of these tubules would, however, become functional, yet there would be no way of escape for the secretion, owing to the fact that they were isolated so far as their connection with the pelvis of the kidney was concerned. This may account for certain large tumors of gradual growth, which starting in at an early period may increase in size until they fill the entire lumbar region on one side of the abdomen.

3. *The Horseshoe Kidney*.—Occasionally the upper poles of the kidney fuse across the middle line, the result being the formation of a single or horseshoe kidney, the two sides being connected by the transverse bar. Robinson states that the isthmus is above only in 7 per cent.

4. Congenital absence of one kidney is fortunately very rare. Morris reports one in 2,500 cases. The following case reported by Barnett illustrates the possibility in regard to this. The points briefly recited are these:—

Patient complained of pain in left side, nausea and weakness. Cystoscopy showed mild cystitis; ureteral openings normal. Catheter up left ureter gives cloudy purulent material. Catheter stopped at 6 inches. Catheter up right ureter 9½ inches. Easily passed clear urine. X-ray showed stones in left kidney pelvis, with kidney displaced low down in the pelvis. Right side negative. A leaded catheter was not passed into the ureters before the X-ray picture was taken.

*Operation*.—Kidney delivered, found bipolar. The bifurcated ureter was traced from the upper half of the kidney pelvis leading down and joining bifurcation of the left lower ureter. Palpation of the right lumbar region through an enlarged incision revealed an apparently normal kidney which was proved at autopsy to be an extra lobe of the liver. Patient died in six days, of uremia. No right kidney found at autopsy.

Here is a case which vividly reveals the danger of removing a kidney. Apparently every precaution had been taken. The

ureters had been catheterized, and the character of the secretion from each kidney carefully scrutinized. An X-ray had been taken. Unfortunately the most important point of all had not been attended to, that is the passage of leaded ureteral catheters and then the taking of an X-ray which would have shown that both catheters were passing toward one side. This kidney at autopsy presented a single pelvis from which the two ureters descended to the bladder.

Before removing a kidney, the following steps should be taken, whenever possible:—

1. The catheterizing of the ureters.
2. The examination of the character of the urine from each ureter.
3. The passage of leaded catheters and the taking of the radiograph.
4. The phenolsulphonephthalein test, generally called the functional test.

A few words about this test which should be more generally used. Let me emphasize first that it is simply supplementary to the regular examination of the urine which should never be neglected. It can be applied without necessarily catheterizing the ureters; in this case, of course, you do not secure the functional results from a single kidney, but from both. Just as taking the blood-pressure gives you a good general idea of the circulation, so this test tells you whether both kidneys are functioning properly. At the present time it is being used also before surgical operations, in the same way as any other examination of urine. Not only is it used in operations on the kidney, for here you need catheterization of the ureters and this, of course, needs the services of an expert in any but the most simple cases, but in any serious operation it shows you whether your kidneys are secreting 10 per cent of the normal, or 90 per cent. Knowing this you are in a much better position to give a favorable or an unfavorable prognosis. The test itself is exceedingly simple. About 1 c.cm. of phenolsulphonephthalein is injected into the buttocks hypodermically, as you would inject any other fluid preferably into the

muscles. The bladder having first been carefully emptied, a catheter is passed into it. Note first when the urine coming from the bladder shows the slightest trace of scarlet in a 10 per cent sodium hydrate solution. Normally, this color should appear in from five to ten minutes at the outside. When fifteen or twenty minutes is taken, it means that the function is subnormal. The urine is then collected for the first hour in a beaker, its color carefully noted and compared with the normal scale of excretion of this particular dye, which is 30-40 per cent. In another beaker collect the urine for the second hour; 15 to 30 per cent of the dye should be returned in the second specimen. Then take the two specimens, mix them, compare the color with that of your color scale, and you get the average. The color scale is prepared by taking one ampoule of the dye and adding it to one litre of water. Diluting this one-half gives you 50 per cent; three-quarters 25 per cent; one-quarter 75 per cent. These colors can be conveniently placed in test-tubes, corked and kept in the laboratory at the hospital. Most of the collecting can be done by the orderly or nurse. The reading of the scale is done by the examiner when he makes a subsequent call.

It is undoubtedly true that this comparatively simple method which I have reviewed very briefly will, in the future, be much more generally used, and it is with the idea of increasing its use that I have taken the liberty of calling attention to its simplicity. Let me make this statement, however: Recent reports should be mentioned which state that some observers securing a large functional percentage from this test have operated on patients, and then have had these same patients die from uremia after the operation. The reason for this, which at present is being developed, is possibly that ether anesthesia, owing to its irritative action on the kidneys, may have been the inciting cause, creating an acute condition where previous to its administration simply a quiescent lesion of the kidney parenchyma existed. It was with this fact in mind that I previously made the statement emphasizing the importance of the regular routine microscopical examination as supplementary to this test.

The following two traumatic cases each ending in nephrectomy

and a final recovery deserve to be briefly reported owing to questions presented of interest from the diagnostic standpoint. They occurred in a comparatively short time of each other and were of rather unusual character, the ages of the patients being respectively thirteen and eighteen years.

The following parallel conditions were presented. First, two operations on each patient. Second, in both cases there was the history of trauma followed by the occurrence of a large indefinite mass in the left upper quadrant of the abdomen extending anteriorly well toward the border of the rectus. The extent of this led to an abdominal incision in each case, though in case one a dorsal puncture of the accumulated fluid was made through a small opening. Third, persistent drainage from the dorsal wound in case one and from the abdominal wound in case two. Fourth, a secondary operation intended primarily to secure better drainage in case one, but ending in a nephrectomy in both cases owing to the pathological condition of the kidney found on its free exposure.

*Case One.*—On April 6th, 1914, while rapidly roller skating on the sidewalk, the patient, a boy aged thirteen years fell, striking on the left side. Following the fall there was pain in the abdomen referred to the left upper quadrant and a moderate grade of shock accompanied by vomiting. The physician called to attend the case noted pain in the region of the left kidney on palpation and on examining the urine found blood in it. The patient gradually recovered from the shock of the accident and the blood disappeared from the urine. On the third day following the accident the symptoms appeared more acute. There was a distinct mass to be palpated which extended well toward the median line, and was gradually increasing in size. As the condition of the boy was becoming more serious, on April 11th, five days after the injury, he was transferred to the hospital. At this time a mass could be palpated extending from the tip of the twelfth rib to the crest of the ilium and nearly to the outer border of the left rectus muscle. An operation was performed by the attending surgeon on May 12th, an abdominal incision being made over the mass which, on incising the peritoneum, was found to be extra-peritoneal, the patient was then turned on the right side and a small dorsal opening was made of sufficient size to expose the mass, which was found to contain a large amount of bloody fluid and pus. A silver trochar one-half a cm. in diameter was passed to the point from which the fluid appeared to come and the wound closed with drainage. Urine

and pus drained freely from the trocar for one week following the operation and the patient seemed to improve. At this time the trocar slipped from the wound and the drainage ceased. There was at once a rise in temperature to 102.5 degrees which persisted for two days until the trocar was replaced when it returned to normal. On the twelfth day the trocar slipped from the wound again and it was found impossible to replace it owing to the tortuous nature of the sinus. The large extra-peritoneal tumor at once recurred. Drainage from the wound ceased and the boy rapidly became septic. Temperature 104.5 on the eighteenth day, 104.2 on the nineteenth day, 104 on the twenty-first day. The writer was called to see the case on the eighteenth day and found it impossible to replace the drainage to what was evidently the pelvis of the kidney. Patient very septic, rapidly losing ground. He was passing on the average 600 c.c. of urine in twenty-four hours. The mass in the left lumbar region was about 20 cm. long by 15 cm. in transverse diameter reaching well toward the middle line. The ureters were not catheterized or a functional test made as it was necessary in order to save the patient's life to operate at once. With the idea of draining a peri-nephritic abscess a lumbar incision was made from the top of the twelfth rib. This at once exposed a large peri-nephritic cavity filled with bloody fluid and pus. On palpating the kidney, which could be readily felt at the bottom of the cavity, it was found to be markedly enlarged and was removed at once as its ruptured condition was very apparent. The patient after a rather stormy convalescence made a satisfactory recovery and had a normal temperature on leaving the hospital twenty-eight days after the operation.

*Case Two.*—The patient, a young man eighteen years of age, while wrestling on March 30th, 1914, fell across his opponent's knee, striking on his left side, the force of the fall coming in the region of the left kidney. Pain was complained of at once but the patient was able to return to his home where the family physician was called. Suspecting an internal injury owing to rigidity in the upper left quadrant of the abdomen he advised rest in bed and local applications. The patient improved somewhat during the next week but for nearly a month was unable to leave his bed and seemed to be gradually getting worse. The rigidity in the left kidney region persisted. As an indefinite mass could be palpated extending well toward the median line he was then transferred to an out-of-town hospital, where an exploratory operation was performed. An abdominal incision was made to the outer border of the left rectus exposing considerable clotted blood in the region of the spleen. The wound was closed with drainage. The drainage continued for thirteen weeks. The patient was first seen by the writer at this time in the Griffin Hospital, Derby, Connecticut. As the odor from the dressings was decidedly uriniferous in character methylene blue was administered by mouth and in twenty-four hours appeared on the

dressings. A probe introduced into the sinus in the lower angle of the abdominal wound passed toward the left kidney for a distance of 15 cm.

Inspection showed the patient to be septic, emaciated and very anaemic. The temperature curve was not high. The abdomen was moderately distended. Palpation revealed an indefinite mass which could be felt in the region of the kidney. This extended anteriorly nearly to the border of the left rectus and below to the anterior superior spine. The examination of the urine was negative. In twenty hours the amount passed per urethra averaged about 750 cm.

*Operation.*—An incision was made in the left lumbar region from the tip of the twelfth rib. On separation of the muscles an extra-peritoneal mass was exposed extending from the twelfth rib to the anterior superior spine. This mass presented fluctuating areas which on being opened contained a large amount of pus. These pus cavities proved to be in a markedly hypertrophied kidney which was removed. The patient made an unusually satisfactory recovery.

### *Conclusions.*

The removal of a kidney, always an undesirable procedure except when absolutely necessary, becomes even more undesirable in young patients. The two cases above reported both presented difficult points in diagnosis, but the conditions found at operation amply justified the means employed to effect relief.

In the first case, the trauma evidently resulted in a rupture of the kidney in such a location as to permit an escape of urine at the point of the lesion, and this was followed by a secondary systemic infection which caused the sepsis.

In the second case how the infection occurred is more difficult to decide, but, as the kidney was completely riddled with abscess cavities, it is possible that it was caused primarily by the trauma which weakened the resistance of the kidney tissue and permitted ready access of pus organisms possibly through the abdominal wound.

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PAPERS READ AT COUNTY  
MEETINGS.



## Papers Read at County Meetings.

HARTFORD COUNTY.

*November 2, 1915.*

### PAPERS:

Chronic Leg Ulcers and Their Treatment. Dr. Arthur B. Landry.

Discussion opened by Dr. Elliott S. Cogswell, Dr. Orin P. Moser.

Care of the New Born. Dr. Walter G. Murphy.

Discussion opened by Dr. T. Weston Chester.

Post-Operative Treatment of Inflammatory Lesions of the Abdomen.

Dr. Frederick B. Willard.

Discussion opened by Dr. John B. Boucher, Dr. Ernest A. Wells.

A Comparison between the Older Views on Diphtheria and Later Day Treatment. Dr. Arthur J. Wolff.

Discussion opened by Dr. Howard W. Brayton, Dr. Henry F. Stoll.

*April 4, 1916.*

### PRESIDENT'S ADDRESS.

### PAPERS:

Nasal Deformities. Dr. Harry R. Wormley.

Discussion opened by Dr. Michael H. Gill.

Arterio-Sclerosis. Dr. John Carter Rowley.

Discussion opened by Dr. H. Gildersleeve Jarvis, Dr. Paul P. Swett.

Life Insurance; Some Points of Medical Interest. Dr. Robert L. Rowley.

Discussion opened by Dr. Edward K. Root.

Renal Tuberculosis. Dr. John B. Boucher.

Discussion opened by Dr. George N. Bell, Dr. Joseph M. Flint,  
New Haven.

NEW HAVEN COUNTY.

*October 28, 1915.*

### LITERARY EXERCISES:

The Diagnosis and Treatment of Poliomyelitis. Dr. Walter L. Barber,  
Waterbury.

Discussion opened by Dr. Oliver T. Osborne, New Haven.

The Recognition of Tuberculosis in Childhood. Dr. Wilder Tileston,  
New Haven.

Discussion opened by Dr. Joseph I. Linde, New Haven.

The Insanities of Adolescence. Dr. A. R. Diefendorf, New Haven.

Discussion opened by Dr. Frank Hallock, Cromwell (by invitation).

Quarantine and Disinfection after Contagious Diseases. Dr. T. J. Kilmartin, Waterbury.

Discussion opened by Dr. Frank W. Wright, New Haven.

*April 20, 1916.*

LITERARY EXERCISES:

Perleche. Dr. John E. Lane, New Haven.

Discussion opened by Dr. T. M. Bull, Naugatuck.

Methods and Results in Modern Public Health Campaign. Dr. C-E. A. Winslow, Professor of Public Health, Yale University.

Discussion opened by Dr. C. J. Bartlett, New Haven.

The Diagnosis of Pulmonary Lesions by the X-Ray. Dr. Charles H. Brown, Waterbury.

Discussion opened by Dr. Wilder Tileston, New Haven.

The Treatment of Acute Lobar Pneumonia by Specific Methods. Dr. Rufus of the Rockefeller Institute for Scientific Research, New York City.

Discussion opened by Dr. George Blumer, New Haven.

NEW LONDON COUNTY.

*October 7, 1915.*

READING OF PAPERS:

The Present Status of Infant Welfare Work. Dr. J. I. Linde, New Haven.

VOLUNTARY PAPERS AND REPORT OF CASES.

*April 6, 1916.*

READING OF PAPERS:

The Mental Condition of Epileptics. Dr. Donald L. Ross, Superintendent Connecticut Colony of Epileptics.

VOLUNTARY PAPERS AND REPORT OF CASES.

FAIRFIELD COUNTY.

*October 12, 1915.*

PAPERS:

Discussion of Some Points on Tuberculosis with Clinical and Laboratory Demonstrations. Dr. W. W. Stockwell, Superintendent State Sanatorium.

Duodenal Ulcer. Dr. S. F. Mullins. Discussion opened by Drs. J. C. Lynch, Bill and Lafield.

Pyelitis in Children. Dr. H. K. Kellogg.

Discussion opened by Drs. Day and Pyle.

*April 11, 1916.*

PAPERS:

Control of Cancer. Dr. Howard Channing Taylor of New York, Director of the American Society for the Control of Cancer.

Control of Cancer from a Gynecologist's Standpoint. Dr. G. R. Hertz-  
ber, Stamford.

Control of Cancer from a General Surgeon's Standpoint. Dr. P. W.  
Bill, Bridgeport.

General Discussion of Papers.

#### WINDHAM COUNTY.

*October 21, 1915.*

##### PAPERS:

Rheumatism. Dr. Paul Swett, Hartford.

Discussion opened by Dr. Tileston, New Haven.

The Relation of Diseases of the Teeth to the General Health. Dr.  
Wilder Tileston, New Haven.

General Discussion.

*April 20, 1916.*

##### PAPERS AND DISCUSSIONS:

Tumors of the Breast. Dr. E. J. McKnight, Hartford.

Pathology of Tumors of the Breast. Dr. John Carter Rowley, Hartford.

Discussion opened by Drs. S. B. Overlock and Louis I. Mason.

#### LITCHFIELD COUNTY.

*October 5, 1915.*

##### PAPERS:

Blood Transfusion Therapy by the Syringe Cannula System. Dr. Ed-  
ward E. Lindeman, New York City.

Lesions Recognized by Means of the Roentgen Ray. (Lantern slide  
demonstration.) Dr. Edward C. Heublein, Hartford.

Dr. Heublein will also give an informal talk on "Radium and its Applica-  
tion in Medicine and Surgery," and demonstrate radium penetration.

*April 25, 1916.*

##### PAPERS:

Arterial Hypertension; Symptoms, Significance, Sequellae, Manage-  
ment. Dr. Henry F. Stoll, Hartford.

Discussion.

Funnel Pelves. Dr. J. Morris Slemons, Professor of Obstetrics and  
Gynecology, Yale Medical School.

Discussion.

##### PRESENTATION OF CASES BY MEMBERS.

#### MIDDLESEX COUNTY.

*October 14, 1915.*

##### PAPERS:

The Aims of a Modern State Hospital. Dr. C. Floyd Haviland, Super-  
intendent Connecticut State Hospital.

Discussion opened by Drs. Down, Calef, Hallock and Mailhouse.

Important Points in the Differential Diagnosis of Primary and Secondary Anemia. Dr. John Carter Rowley, Hartford.

Discussion.

Traumatic Conditions Affecting the Kidneys with Report of Cases. Dr. Willis E. Hartshorn, New Haven.

*April 13, 1916.*

PAPERS:

History, Aetiology, and Symptomatology of Influenza. Dr. C. B. Chedel.

Medical Treatment of Influenza. Dr. J. Murphy.

Vaccine in the Treatment of Influenza. Dr. K. C. Mead.

Complications of Influenza. Dr. L. J. Loene.

Appendicitis as a Complication of Influenza. Dr. J. E. Loveland.

General Discussion of Influenza.

TOLLAND COUNTY.

*October 19, 1915.*

PAPERS AND DISCUSSIONS:

The Syphilis We See but do not Recognize and the Importance of Familial Studies. Dr. Henry F. Stoll, Hartford.

Some Points in the Pathology of Pregnancy of Special Interest to the General Practitioner. Dr. Calvin H. Elliott, Hartford.

County Report: Surgical Reminiscences. Dr. Cyrus B. Newton.

Epilepsy. Dr. John F. Hackett, Assistant Physician at the Connecticut Colony for Epileptics at Mansfield Depot.

Discussion opened by Drs. James Stretch, Alonzo L. Hurd.

VOLUNTARY PAPERS.

GENERAL DISCUSSION.

*April 18, 1916.*

PAPERS AND DISCUSSIONS:

Digestion and its Disorders in Infancy and Childhood. Dr. Howard W. Brayton, Hartford.

Diagnosis and Treatment of Eye Diseases Illustrated by Lantern Slides in Colors. Dr. C. Weidner, Hartford.

Mental Condition of Epileptics. Dr. Donald L. Ross.

Discussion opened by Dr. W. L. Higgins.

VOLUNTARY PAPERS.

GENERAL DISCUSSION.

## OBITUARIES.



## Frank Atwater Elmes, M.D., Derby.

F. N. LOOMIS, M.D., DERBY.

Frank Atwater Elmes was born in Derby, Conn., November 27, 1879. He was the son of William Forbes and Katherine Vincent Elmes. On his father's side he descended from the New Haven Atwaters, David Atwater being one of the foremost planters of New Haven County. His mother descended from the well-known Vincent family of Philadelphia. He prepared for college in the Derby High School, and entered the academic class of 1902 at Yale. In June, 1900, he withdrew from college and entered the English army for the Boer war. When he arrived at South Africa he enlisted with the English Mounted Infantry. He served a year, and after being wounded twice and incapacitated by fever he was invalided home with a pension and rewarded with a medal.

In 1901 he entered the Yale Medical School. In his senior year he was president of his class and since his graduation in 1905 he has been his class secretary.

In 1905 and 1906 he was intern in the New Haven Hospital. The year 1907 was spent in Rome, Berlin and London in post-graduate work.

In 1908 he started the practice of his profession in Derby, Conn. Almost from the start he had a large practice. While he did a general practice the larger part of his work was surgical. When the Griffin Hospital was opened in 1909 he was appointed on the Surgical Staff serving the Hospital until his death with credit to himself and profit to the Hospital. He was Health Officer of the City of Derby for two years and Medical Inspector of the Schools for a like period.

Politically he was a Republican. He ran for mayor of the City of Derby in 1912. He was defeated although he ran far ahead of his ticket.

He was a conscientious Roman Catholic, being a communicant of St. Mary's Church of Derby.

His death, which occurred on May 21, 1916, was a tragedy. He had been sick for a few days with quinsy sore throat but was around his home and even went out to see nearby patients. At 10 P. M., at his request, the district nurse gave him a hypodermic, a H.M.C. tablet. At 5 A. M. the next morning his mother found him dead in bed. The bed clothes were tucked about him just as they were left by the nurse. He never made a move after he received the hypodermic.

Dr. Elmes never married. He was an ideal son. His mother he adored, and devoted himself to her, showering upon her countless little attentions such as fond husbands do their wives.

He came to Derby just before the opening of the Griffin Hospital when the hospital had to develop a surgical staff. His training abroad and surgical ability was a rare assistance to the surgical side of the hospital. He devoted more time to lecturing the pupils of the Hospital Training School for Nurses than any of his college and was gifted with the ability to teach far above the average.

In his death the associated cities lost one of its foremost physicians and a citizen whose influence was always for the best and one who always worked for the uplift of the community.

## Charles R. Hart, M.D., Bethel.

G. D. WIGHT, M.D., BETHEL.

Charles R. Hart, for many years a well-known physician of Bethel, Conn., died suddenly of heart disease on August 29, 1916.

He was born in Hartford, Conn., July 22, 1837, and received his early education in the Hartford public schools. He graduated in New York City at the College of Physicians in 1859 and served one year in Bellevue Hospital.

He entered the United States Army in December, 1861, as Second Assistant Surgeon, was promoted to First Assistant Surgeon on August 10, 1862, and was again promoted to Surgeon in November, 1864. He was honorably discharged on August 25, 1865.

He married Miss Ella J. Gardner in Cleveland, N. Y., June 15, 1869.

He is survived by his wife and four daughters. He lost his only son a few years ago.

He was a man who was very outspoken, absolutely straightforward in all his dealings, of good mind, and respected by all who knew him.

Many friends mourn his loss and share a pleasant memory of his well-spent life.

## Rush W. Kimball, M.D., Norwich.

EDWARD P. BREWER, M.D., NORWICH.

Dr. Rush W. Kimball died at Norwich, November 15, 1915, at the age of fifty-two. He was born in Wentworth, N. H., where he received instruction in the public schools. In 1887 he graduated from Williams College.

His degree in medicine was conferred in 1880, by the Long Island Medical College of Brooklyn, N. Y. The following year he served as resident physician in the Long Island College Hospital.

He began practice in Tacoma, Wash., but remained but a year or two and then removed to Norwich, where he practiced for twenty-three years.

Dr. Kimball was always active in promoting the professional interests of medicine, serving as President of the Norwich Medical Association, the New London County Medical Association, and Councilor of the State Medical Society, also serving continuously on some committee. He was Medical Examiner for several years to the Town of Norwich and member of many social organizations. In every position he stood for purity and progress.

Being kind, thoughtful and cheerful, he formed strong friendships and built up a practice among friends. His special interest was surgery, and he kept step with the scientific and progressive leaders of the times. Attending almost every surgical congress, he would labor with the eagerness and persistency of an enthusiast. As a natural sequence, his surgical work pictured his sincerity; it was thorough, conscientious, modern and successful.

His relations with his confreres were cordial and dignified, ever ready to support and assist with a sound science and skillful art.

We are glad to have enjoyed his friendship for more than a score of years, and feel the sincerest regret that his name should be cancelled from the scroll of the universe.

## Chauncey Stafford Lamb, M.D., New Haven.

SEYMOUR L. SPIER, M.D., NEW HAVEN.

Chauncey Stafford Lamb, M.D., was born in Mechanicsville, N. Y., February 10, 1872. He attended the St. John's Military Academy and graduated from the medical department of the University of Buffalo in 1893. He spent some time after his graduation in the Buffalo General Hospital and was later consulting physician of the Faxon Hospital in Utica, N. Y.

He came to New Haven about twenty years ago. He served as an assistant in the New Haven Dispensary in the surgical clinic. For ten years he was the surgeon for the National Folding Box and Paper Company. He was married in this city to a Miss Cooper, November 20, 1901.

He was a member of this Society, the state Society and the American Medical Association. He held the office of Police Surgeon from October 16, 1900, until his death. He was an enthusiastic Elk, holding a life membership in the order. He loved children ardently and it was probably through his work and personal contributions that the Children's Christmas Tree, which has become an annual feature of the Benevolent and Protective Order of Elks, was so successfully established and carried out. He had no axe to grind with any of his professional brethren. He rarely if ever spoke disparagingly of his fellow-men. His hearty laugh will be remembered by all.

His last illness came on suddenly, March 20, pneumonia, and he died less than forty-eight hours after he was stricken, on March 22.

## Benjamin Lott Lambert, M.D., New Haven.

FRANK H. WHEELER, M.D., NEW HAVEN.

The Lambert family trace their genealogy back in an unbroken line to the time of William the Conqueror, one of whose officers was a Lambert. Etymologically the family name is probably derived from the word Lombardy, the name of the country from which they originally came. One of the family was Cardinal Lambertini who in 1730 became Pope Benedict XIV.

Jesse Lambert, the founder of the family in this country, settled in Milford, Conn., in 1680. One of his descendants was Denison David Lambert, who married Jane Adams Hinman. They resided in New Haven, Conn. To them was born, on February 16, 1856, a son whom they named Benjamin Lott Lambert.

Benjamin attended the public schools in New Haven and also the Hopkins Grammar School. He was two years in the Yale Medical School, but graduated in medicine at the New York University in 1883. After a service in Bellevue Hospital he returned to New Haven and engaged in the general practice of medicine, in which he continued for about twenty-eight years. In 1903 he removed to Florida, on account of ill health. He returned to New Haven in 1908 and resumed his practice. His health, however, was not fully restored and he fought an uphill fight against disease and misfortune which slowly but surely sapped his vitality. On February 3, 1916, the hard fight was finished and Benjamin Lott Lambert, M.D., passed away.

Doctor Lambert married Mary Durant Gilbert, December 15, 1881. They had two children, a daughter who died in infancy and one son, Harold Denison. He lived to be seventeen years old and died in July, 1899, of typhoid fever. The loss of this only son and child was a severe blow to the parents and one

from which neither ever recovered. When, in July, 1915, Mrs. Lambert suddenly died, the last link was broken and thereafter the Doctor simply waited for the end, which he knew was not far away.

During the earlier and more active part of his career, Doctor Lambert had a very large practice. To an unusual degree he endeared himself to his patients and inspired their confidence. He was absolutely unselfish and was very prodigal of his time, his energy and his money. No call to a sick person was ever refused by him day or night. The rich, the poor and those from whom he knew he would receive no pecuniary reward, were all treated with the same skill and devotion.

In his duties as a citizen, Doctor Lambert was attentive, active and prominent. His political affiliation was with the Republican party, and he had the distinction of being the first Republican Alderman ever elected from the Fourth Ward. He served the city as Alderman from 1895 to 1898. In 1897 and 1898 he was President of the Board and as such was, at one time, the acting Mayor. From 1895 to 1897 he was a member of the Board of Finance, and from 1895 to 1898 he was Chairman of the Committee on Lamps.

In fraternal circles Doctor Lambert was also very active. He was a thirty-second degree Mason and a Mystic Shriner. He held, from time to time, high official positions in the Odd Fellows, the Knights of Pythias, Ancient Order of United Workmen, and Heptasophs.

As may be inferred from this brief resumé, the Doctor was of a very social disposition. In this social life Mrs. Lambert was an active and energetic participant. They had a large circle of devoted friends. All guests at their home received an open-hearted welcome, and were made to feel that any efforts made for their entertainment gave just as much real pleasure to their hosts as to the recipients of this boundless hospitality.

To the younger men in his profession Doctor Lambert was extremely kind. Many of us, from personal experience, can testify to instances of his friendliness and generous encourage-

ment, given at times when just such assistance was most welcome and helpful.

To-day we sorrow in our hearts for a fellow-worker who was kind and generous, one who did so much for others, but for himself could do so little. We can but hope and believe that the reward, which he so richly deserved but failed to obtain on earth, may be his now and forevermore.

## Frederick Arthur Ruickoldt, M.D., New Haven.

C. ARTHUR RUICKOLDT, M.D., NEW HAVEN.

Frederick Arthur Ruickoldt was born December 13, 1839, at Weimar, Grand Duchy of Sachsen-Weimar. At the age of four years, he lost his father. He attended the Stoy Institute at Jena, and later was graduated from the Gymnasium. He studied Medicine at the University of Jena, receiving his degree in 1865. He was singularly fortunate in having for his teachers in the Jena faculty several men who later became world-famous. Among these may be mentioned Professor Ernest Haeckel, then Professor of Comparative Zoology; Professor Gegenbauer, anatomist; Professor Gerhardt, internist; Professor Mueller, "Miltz-Mueller" of spleen fame; Professor Cermak; Professor Reid; Professor Schulze, obstetrician; Professor von Bertzold and others. After graduation, he spent several months in the Insane Hospital at Jena as interne.

In 1866 he was in Vienna doing post-graduate work when the Austro-Prussian War broke out. He remained there during these stormy times—a German in the enemy's country, well treated and respected.

In Vienna he visited the clinics and became particularly interested in Professor Hebra's dermatological work and Professor Arlt's eye clinic. He returned to Germany and became an interne in the Hamburger Allgemeiner Kranken Haus zu Altoona. In 1868 he came to America, settling in New Haven. He brought with him, perhaps, the first hypodermic syringe, to New Haven, having bought it in Vienna of Leiter.

My father was always very much interested in Dermatology; but in the early days, specialists were unknown here, so he devoted himself to general practice. During the 70s and 80s, his practice was very large. During the last ten years, physical ailments gradually eliminated him from the list of active practitioners and since 1910 he had been practically an invalid, being

under constant medical care. In the spring he became completely incapacitated and, on June 2, 1915, died from arteriosclerosis in his seventy-sixth year. His body was cremated on June 5, 1915, at the New York and New Jersey Crematory, Union Hill, N. J.

My father was a man of a very retiring and non-communicative nature. He was a German of the old stock and could never adapt himself to the American customs and manner of thought. Always mentally active, he found great pleasure and enjoyment in studying nature. He enjoyed most a drive into the country. In his earlier days he was an active member of the New Haven Rifle Association and a marksman of no mean ability.

He was a devoted member of his chosen profession, serving it faithfully for nearly fifty years. At the time of his death he was the oldest member of the New Haven County Medical Association.

## Thomas Hubbard Russell, M.D., New Haven.

WILLIAM WHITNEY HAWKES, M.D., NEW HAVEN.

General William Huntington Russell was a friend of Abraham Lincoln and of John Brown and his service to the cause of education in America has been compared to that in England of Dr. Arnold of Rugby. At his military academy in New Haven, more than three hundred boys were prepared for service in the Civil War, a large proportion of them becoming officers in the Federal Army. The Russell Trust Company, the corporate name of the Skull and Bones Society of Yale, bears his name, he being one of the founders. He also founded the State Militia of Connecticut, for which service he was granted the title of Brigadier General, by Act of the Legislature. His ancestors numbered many distinguished men. Among them were: Rev. William Russell, the first Yale graduate to be offered the presidency of Yale; Rev. James Pierpont and Rev. Noadiah Russell, founders of Yale; and Thomas Hooker, the founder of Connecticut. Thomas Hubbard, his wife's father, was a professor of surgery at Yale.

Of these parents and under this heritage and influence Thomas Hubbard Russell was born and nurtured. From his birth, on December 14, 1851, he resided continually in New Haven up to the hour of his death on February 2, 1916. He attended his father's school until 1868, and completed his preparation for college at the home of his uncle, the Rev. Simeon North, ex-President of Hamilton College; graduated from the Scientific School at Yale in 1872; and from the Yale Medical School in 1875. During his medical course he assisted Professor O. C. Marsh in the Paleontological Department of the College, and in the period while his early practice of medicine was developing.

In 1875 he was house physician and surgeon at the New Haven Hospital and for many years was a physician in the New Haven Dispensary, and was assistant to the late Dr. Francis

Bacon. From 1877 to 1897 he was assistant to Dr. David P. Smith, in the Yale Medical School; and from 1880 to 1883 he lectured in the school on medical subjects. He was attending surgeon to the New Haven Hospital from 1878 to 1908, when he became consulting surgeon. He was Professor of *Materia Medica* and Therapeutics in the Yale Medical School from 1888 to 1891; and from that year, until his death, held the chair of Professor of Clinical Surgery.

On December 21, 1882, he married Mary K., daughter of Lyman E. Munson, formerly Judge of the Supreme Court of Montana, the last appointment made by President Lincoln.

Dr. Russell's broad practice extended throughout Connecticut and he has operated in nearly every town. His society affiliations included: The American Association for the Advancement of Science; the Connecticut Academy of Arts and Sciences; The New Haven Historical Society; The Connecticut State and the New Haven County Medical Society; the New Haven City Medical Association; The Congregationalist Club and The Graduates Club.

He is survived by two brothers, Attorney Talcott Huntington Russell, very well known in legal circles in New Haven; and by Edward Russell of London, England, inventor of the Russell silver process. Also by his widow and all five of his children: Mary Talcott, Dr. Thomas Hubbard Russell, Jr.; Eleanor W., all of this city, and William Huntington, formerly of Bridgeport, now of New Haven, and Edward Stanton Russell of Philadelphia.

It is impossible to measure justice to the character and career of Tom Russell in the limits of these few pages, and the best we can do is to touch, staccato like, on his salient qualities. His whole mind and body were given to everything he essayed—nothing by halves. By predilection and earliest training, his dominant characteristics were earnestness and a concentration upon work. Indeed Dr. Russell's name will stand out conspicuously in the medical annals of Connecticut for the complete devotion to his professional work, which he manifested night and day, year in and out, with practically no cessation or intermissions. With the self-abnegation and humility of a gracious,

loyal gentleman, at all times and under all circumstances, he made an equal religion of his unremitting labors for the relief of human suffering, and of his consummate aim for the cure of his patients in every walk. Nothing was too trivial for his best efforts, and his quiet courage was flagged by nothing, however formidable or grave in practice. No personal sacrifice ever stayed his course, and his last ounce of strength was laid on the altar of his convictions and of his toil for humanity, even unto the last days of his life.

My fullest opportunity of judging Dr. Russell was during our twenty-eight years as colleagues in the surgical staff of the New Haven Hospital, part of which at least covered a time when service there meant probably more personal toil than at most any other period. He was on call at all hours and, despite an exacting and extensive private practice, could usually be found at his post. His methodical thoroughness, his sober seriousness of purpose, his conspicuously quiet and sympathetic manner, all won for him the confidence and lasting gratitude of his patients. So, too, his ability in concentration, his analytical habit of mind, his poise in judgment, unvarying courtesy, soundness of opinion, grasp and interpretation of symptoms and his skill in operating, begat and held the respect of his associates.

In private practice, also, he never seemed to hurry; and, moreover, doubtless forfeited much time in preparing for emergencies too remote in operating for the majority of surgeons to consider; and which furthermore prompted him to carry about with him an armamentarium that would often have sufficed for a surgical display. His formal approach to a private residence was notable of the cautious and painstaking doctor that he was.

He was generous minded, was a stalwart in friendship, seldom spoke disparagingly of anybody; and, in those rare instances, mentioned glaring facts alone, leaving the judgment for the hearer to form. With all his seriousness he was hopeful and cheerful; and had a fine, often resembling a sub-conscious, sense of humor, which was apt to turn the point of a situation upon himself, always sparing another, unable to wound anybody's feelings.

Thorough, just, modest to a fault, gentle, devoted, honest, reliable, avoiding conflicts of a personal sort, but sturdy and courageous in practice—all of these in the supreme sense; and, withal, a conspicuous Christian gentleman of the truer type.

“Inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me.”

## James Lawrence Sullivan, M.D., Bridgeport.

ANDREW McQUEENEY, M.D., BRIDGEPORT.

On August 12, 1916, Bridgeport medical practitioners lost from their midst Dr. James Lawrence Sullivan. He was born August 10, 1873, in Colchester, Conn. His early education was received in the public schools of that place; later he attended a private preparatory school in Colchester. He pursued his medical studies in the College of Physicians and Surgeons of Baltimore, graduating with honors in 1901. He was president of his class.

He then located as a private practitioner in the east side of Bridgeport, and by his skill and earnest devotion to his work built up a very comfortable practice, especially in obstetrical work, in which he was very successful. He was connected with the staff of St. Vincent's Hospital as an assistant on the Gynecological Service. For four years he was surgeon to the police department of the City of Bridgeport. In 1915 he married Miss Anna Sadler of Bridgeport. There was born to them one child, a daughter, Alice. He was a member of the Bridgeport and Fairfield County Medical Society.

His medical practice was largely among the poorer classes, and it was justly said of him that no matter how poor the patient nor how small the chance of receiving a fee, Dr. Sullivan never slighted the case, but gave freely that treatment and advice which he deemed best. His untimely end has been sincerely mourned by his clientele.

He was of that quiet, unobtrusive type, with no effusive gushings, no hilarious mirth, rather reticent and of serious demeanor, withal a warm smile which bespoke a good heart. He did not strive to attain great fame, but rather to conscientiously do his duty, as he saw it. He was respected and liked by his medical brethren as one who believed that of all the arts medicine is the most noble, and practiced it according to the highest standard.

He is survived by his mother, three brothers, two of whom are Roman Catholic priests; two sisters, of whom one is a trained nurse, and by his wife and child.

His health began to fail about a year ago but despite the advice of many physicians he never really submitted himself to a rigid physical examination until a short time before his death. He had discovered that his spleen was enlarged and called his physician's attention to it. Careful examinations revealed Hodgkin's disease. It had been his practice to subjugate his own ailments or ignore them in the pursuit of his work, and he persisted thus until the end.

"For thee, O now a silent soul, my brother,  
Take at my hands this garland, and farewell.  
Thin is the leaf, and chill the wintry smell,  
And dull the solemn earth, a fatal Mother."

## Erastus Perry Swasey, M.D., New Britain.

EVERITT JAMES MCKNIGHT, M.D., HARTFORD.

Dr. Erastus Perry Swasey died at his home in New Britain, Conn., November 13, 1915. Several years ago he had his first attack of angina, followed at intervals by numerous milder seizures. Sugar had been found in his urine for some time. For the last two years he had been able to engage in the practice of his profession to a very limited extent only. He suffered greatly from dyspnœa, the result of his cardiac condition and a hydrothorax for which he was repeatedly aspirated. For nearly a year his systolic blood pressure had been about ninety.

Dr. Swasey was the son of Dr. Charles Lamson and Hannah Perry Swasey and was born in Wakefield, N. H., in 1847. On both sides he came from old New England stock, his Swasey ancestors having settled in Salem, Mass., in 1632. His father and grandfather were physicians.

The family moved to New Bedford, Mass., where he was educated in the public schools and under the personal tuition of his father. He graduated from the College of Physicians and Surgeons, New York, in 1869, was a surgical interne in the New York Hospital for fifteen months and the Nursery and Childs' Hospital, New York, for one year. He took the practice of a physician in Wolcottville, now Torrington, for a month or two and settled in New Britain, Conn., in the latter part of 1871, where he resided continuously until his death.

On October 28, 1873, he married Agnes Smyth, by whom he had one child, Agnes Perry, who died at the age of eleven, the mother having died at the time of her birth. His second marriage occurred June 5, 1889, to Hope S. Martyn of South Attleboro, Mass., who survives him.

Dr. Swasey became a member of the Hartford County Medical Association in 1872 and took an active part in the work of the Association and the Connecticut State Medical Society until

incapacitated by disease. He was Fellow or Delegate from the Hartford County Association to the State Society in the years 1880, 1881, 1897, 1898, 1909, 1910, 1912 and 1913, and was President of the Hartford County Association in 1893. He was treasurer of the Connecticut State Medical Society for six years, from 1882 to 1887 inclusive. The proceedings of the Connecticut State Medical Society contain a number of cases reported by him, two of which are worthy of special mention as showing his remarkable ability and resourcefulness in times of great emergency—A Case of Wound of the Subclavian Artery and Vein in 1894 and A Resection of Intestine in a Femoral Hernia in 1899.

Dr. Swasey was a man of varied attainments and had traveled extensively. As a landscape photographer he had few equals and his collection of lantern slides of scenes in Italy and Switzerland was at one time said to be the finest in existence. He was an expert wood carver and had made a valuable and unusual collection of horns of animals.

To the writer's personal knowledge the abolishment of the exhibits in connection with the annual meetings of the State Society which formerly detracted largely from the work of the scientific sessions was due almost entirely to the efforts of Dr. Swasey.

Fearless in his opposition to that which he thought was wrong he was not slow in expressing his disapproval of what appeared to be wrong-doing on the part of those about him, an attribute which often made him appear to great disadvantage. This, however, was overbalanced by a remarkable simplicity, a generous sympathy and an exquisite tenderness. His name will long be held in fond remembrance not only by those to whom he ministered with an untiring devotion but by everyone who had the good fortune to have had him for a friend, than whom there never was a better.

## Josiah Swett, M.D., New Hartford.

ERNEST R. KELSEY, M.D., WINSTED.

On the afternoon of January 13 the death of Dr. Swett was announced and the news spread like a dark cloud of despair and sorrow throughout the surrounding community.

The great loss could not be fully realized as its announcement came as a stunning shock to all.

Dr. Swett was taken ill with grip on Wednesday of the previous week, after having worked without cessation, even for a moment's rest, for three days and nights, and through his efforts for others was completely exhausted. On Thursday he was compelled to take to his bed, but arose and attended those patients who called at the office. The next day he grew much worse, pneumonia developed, which in his exhausted condition made rapid progress and extended to both lungs. He failed rapidly and died on the following Thursday.

Josiah Swett was born in Bethel, Vt., March 4, 1856, the son of Josiah Swett, an Episcopal clergyman. He was educated in the schools of Vermont, and later graduated from the University of Vermont, and still later he took a post-graduate course at the College of Physicians and Surgeons of New York.

He was first admitted to the practice of medicine in New York and later in Massachusetts and Connecticut.

He was married in October, 1881, to Miss Bertha Huddleston, of Granville, Mass., where he was located, and where he resided until 1891 when he removed to New Hartford.

As a physician of ability he was recognized on all sides, his practice extending into Canton, Harwinton, Torrington, and Hartland, and he was called to even greater distances to attend his former patients.

For about fifteen years he had been medical examiner for New Hartford and Barkhamsted, and for a number of years also acted as health officer for those two towns.

He was a member of the Litchfield County Medical Society, of the Connecticut State Medical Society and the American Medical Association; he was also a member of Mount Moriah Lodge of the Masons of Westfield, Mass., and of Tunxis Lodge, No. 23, Knights of Pythias, of New Hartford.

Besides his widow, he leaves three sons, Dr. Paul Swett of Hartford, orthopædic surgeon to the Hartford Hospital; Attorney Walter A. Swett of New York and John Guy Swett of Hartford.

Dr. Swett held an enviable position throughout western Connecticut, his skill and magnetic personality being recognized throughout the country. As a "family doctor" he was beloved and esteemed throughout New Hartford and the surrounding towns, where his big heart and wonderful ability as a physician made him the reliance, advisor and friend in hundreds of households.

Aside from the friend and physician, New Hartford will always have reason to remember Dr. Swett as one of its most prominent residents and public-spirited citizens in the highest degree.

In his death, not only New Hartford but the County and the State lose a useful and progressive citizen, and the Medical Society a gifted and esteemed member.

## Joseph Hendley Townsend, M.D., New Haven.

GUSTAVUS ELIOT, M.D., NEW HAVEN.

Joseph Hendley Townsend, the son of John and Harriet Esther (Sears) Townsend, was born in New Haven, Conn., January 18, 1862. His father, who was in active business in New Haven until his death, was the son of James Webster and Rachel (Mansfield) Townsend. The family descended from Thomas Townsend, who emigrated from London, England, in 1637 and settled in Lynn, Mass. Thomas's great grandson, Jeremiah, removed from Boston to New Haven in 1739, and bought the property at the corner of College and Elm Streets which since 1833 has been occupied by the First Methodist Church. This Jeremiah was the great-grandfather of Dr. Townsend's father. The wife of Jeremiah's son John was the first person to be buried in the Grove Street Cemetery, New Haven, November 9, 1797. Dr. Townsend's mother was the daughter of Elisha and Esther (Hendley) Sears of Middletown, Conn. His father died when he was five years old and his education was supervised by his mother.

He prepared for college at the Hillhouse High School in New Haven, where he was a member of the Gamma Delta Psi fraternity, then in its earliest years.

He graduated from the academical department of Yale University in 1885. He was a member of the Delta Kappa Epsilon fraternity, and maintained a creditable standing in scholarship.

Immediately after graduation he entered the Yale Medical School, from which he graduated in 1887, receiving the Campbell Prize for the best examination in Obstetrics.

He next served for a year and a half on the house staff of the New Haven Hospital, and then commenced practice in New Haven at his home, on the corner of Howe Street and Edgewood Avenue.

He was connected with the staff of the New Haven Dispensary from 1891 to 1894, and also with the teaching staff of the School of Medicine of Yale University, first in 1891 and 1892 as assistant in clinical medicine, from 1892 to 1894 as demonstrator of obstetrics, being the first to receive this appointment, and from 1911 to 1915 as lecturer on hygiene.

For several years he was one of the surgeons of the Police Department, and also a member of the Board of Health of the City of New Haven. In 1901 he was appointed by Governor McLean a member of the State Board of Health of Connecticut, of which he was elected Secretary and Executive Officer in March, 1906, an office which he continued to hold until his death.

He enlisted, as a private, in "The Grays," Company F, 2d Connecticut Infantry, July 1, 1891. He was appointed First Lieutenant, Assistant Surgeon, September 15, 1892; Major, Surgeon, 2d Connecticut Infantry, June 11, 1896; and Chief Surgeon, Sanitary Troops, Connecticut National Guard, March 25, 1911. In token of respect to his memory the Adjutant General, by order of the Governor, ordered that the National Flag be displayed at half staff on all the State Armories until 2 P. M. on the day of the funeral.

He served for many years as a member of the Board of United States Examining Surgeons for Pensions.

He was a member of the New Haven Medical Association, of which he was secretary for four years, 1893-1896; and president for two years, 1897 and 1898; of the New Haven County Medical Association, of which he was clerk for ten years, 1892-1902, and president in 1903; of the Connecticut State Medical Society, of which at his death he was treasurer, having been elected annually since 1905; of the American Medical Association; the American Public Health Association; and the Association of Military Surgeons.

At the Centennial Meeting of the Connecticut Medical Society, in 1892, he read a paper on Pelvic Cellulitis. At the annual meeting of the New Haven County Medical Association, April 27, 1911, he read a paper on Vital Statistics, which was published

in the Yale Medical Journal, May, 1911. Before the General Session, American Public Health Association, Colorado Springs, September, 1913, he read a paper entitled Anti-typhoid Vaccination, which was published in the American Journal of Public Health, Vol. 4, No. 11.

An exceedingly important piece of work, and one of great historical value, was the preparation by Dr. Townsend of a complete list of all who had been members of the New Haven County Medical Association since its organization in 1784, with biographical notes in regard to those who had died. This was printed by the Association in a volume published in 1902, of which it covered sixty-six pages. It is an unusual example of painstaking and accurate historical research.

Most of his later writings were published in the monthly bulletins of the Connecticut State Board of Health. These were characterized by a clear understanding of the principles of modern sanitary science. In his recommendations he was always guided by a keen perception of what it was practicable to accomplish without arousing the antagonism of the public, and without involving the State in extravagant expenditure. His clear and dignified contributions will always remain a striking example worthy of imitation by those who are attempting to bring the principles of preventive medicine to the attention of the citizens of the state.

He was also a member of the Sons of the American Revolution, the Graduates Club of New Haven, and the Hartford Club of Hartford, Conn.

He attended the United (Congregational) Church in New Haven, of which he was a member for many years.

The Republican party received his loyal support.

He was married in New York City, April 28, 1896, to Mrs. Bertha (Goodyear) Bradley, the daughter of General Ellsworth D. S. and Sarah A. (Bishop) Goodyear, of North Haven, Conn., who survives him. Dr. Townsend left no children.

He died at his home, 62 Trumbull Street, January 7, 1916, of pneumonia following influenza, after an illness of a week; and was buried in the Grove Street Cemetery, New Haven.

He was always an industrious student, but rarely offered his opinion or publicly discussed a subject except by invitation. Consequently even his friends were often surprised and pleased at the breadth of his knowledge and the clearness with which he briefly presented his views.

As a teacher he was clear, sympathetic and conservative.

As a military surgeon he was kind, thorough and punctual, inspiring in his subordinates such a keen perception of duty that he was able to secure the accomplishment of the required work with few or no orders.

As a recording officer of scientific organizations his punctuality and accuracy are evidenced by the preserved records of the societies, while his efficiency as a presiding officer is proven by the prosperity which they enjoyed under his administration.

As a sanitary executive his work was characterized by his usual thoroughness, and by practical common sense methods which accomplished the best results without exciting great opposition.

Quiet and unassuming in manner, genial yet forceful, always honorable in conduct and loyal to his friends, his memory will be ever cherished by his contemporaries.

## Frederick Buell Willard, M.D., Hartford.

FREDERICK L. CROSSFIELD, M.D., HARTFORD.

I am grateful for the privilege to pay my personal tribute to the memory of the late Dr. Frederick Buell Willard. I had known him from the time he first came to Hartford in 1904.

An acquaintance grew into a deep and lasting friendship. We worked together and we played together.

As a skillful and resourceful surgeon he was always an inspiration to me.

He possessed a keen mind and was a thorough student.

His genial manner made many sterling friends who mourn his untimely death. His home life was ideal and he spent all the time possible with those he loved. Dr. Willard was born in Burlington, Vt., October 30, 1873, the son of Dr. Andrew J. Willard, a graduate of Yale in the famous Class of '53.

He fitted for college at the Burlington High School and was initiated into Sigma Phi fraternity upon his matriculation at the University of Vermont in June, 1893. His college career was a brilliant one. He was the winner of an oratorical prize as a sophomore, business manager of the University Cynic in his junior year, the highest ranking officer of the University military organization, and class president in his senior year, and at graduation he was elected permanent president of his class and a member of Phi Beta Kappa.

In 1900 he received the degree of A.M. and M.D. from the University and at once joined the staff of the Boston City Hospital. He was house surgeon there until 1902 when he connected himself with the House of Mercy at Pittsfield, Mass.

He entered active practice in Hartford in 1904, and for a time was associated with the late Harmon G. Howe. He specialized in surgery and was at the time of his death assistant surgeon at the Hartford Hospital.

He was instructor in the School of Pedagogy connected with

the Hartford Theological Seminary, and a first lieutenant in the Medical Reserve Corps of the Connecticut National Guard.

Dr. Willard was stricken with appendicitis June the ninth. Every means known to science was used without avail. He died June the sixteenth.

He is survived by his wife and three daughters, by two sisters and two brothers. In the death of Dr. Willard the medical profession has lost an esteemed and valued member.

MEMBERS OF THE  
CONNECTICUT STATE MEDICAL  
SOCIETY.



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Annual Meeting, First Tuesday in April; Semi-Annual Meeting,  
Fourth Tuesday in October.

#### Hartford:

David Crary .....	926 Main Street.
William W. Knight.....	254 Trumbull Street.
Thomas D. Crothers.....	142 Fairfield Avenue.
Ellen H. Gladwin.....	705 Asylum Avenue.
Frederick S. Crossfield.....	75 Pratt Street.
William D. Morgan.....	49 Pearl Street.
John F. Axtelle.....	635 Main Street.
George K. Welch .....	26 State Street.
Phineas H. Ingalls.....	49 Pearl Street.
Edward K. Root.....	49 Pearl Street.
John Howard.....	1337 Main Street.
Charles D. Alton.....	75 Pratt Street.
Joseph E. Root.....	67 Pearl Street.
William Porter, Jr.....	179 Allyn Street.
Frederick T. Simpson.....	122 High Street.
George R. Miller.....	51 Church Street.
Charles C. Beach.....	125 Trumbull Street.
Gideon C. Segur.....	67 Farmington Avenue.
Alva E. Abrams.....	36 Pearl Street.
Charles E. Taft.....	98 High Street.
Thomas F. Kane.....	517 Main Street.
Arthur J. Wolff.....	904 Main Street.

Ansel G. Cook.....	179	Allyn Street.
Edwin A. Down.....	902	Main Street.
Daniel F. Sullivan.....	64	Church Street.
EVERETT J. McKNIGHT.....	110	High Street.
Benjamin S. Barrows.....	164	High Street.
Michael A. Bailey.....	434	Main Street.
George N. Bell.....	44	High Street.
Frank L. Waite.....	68	Pratt Street.
Charles S. Stern.....	75	Pratt Street.
Franklin L. Lawton.....	295	Main Street.
John H. Rose.....	75	Pratt Street.
John B. Waters.....	281	Trumbull Street.
Joseph B. Hall.....	36	Pearl Street.
Edward O. Elmer.....	805	Park Street.
Janet M. Weir.....	282	Sigourney Street.
John F. Dowling.....	1315	Main Street.
Philip D. Bunce.....	98	High Street.
Wilton E. Dickerman.....	125	Trumbull Street.
John B. Boucher.....	25	Charter Oak Avenue.
Levi B. Cochran.....	50	Farmington Avenue.
James H. Naylor.....	1	Main Street.
Charles P. Botsford.....	219	Collins Street.
James H. Standish.....	479	Albany Avenue.
Michael H. Gill.....	36	Pearl Street.
John B. McCook.....	390	Main Street.
John W. Felty.....	902	Main Street.
Thomas W. Chester.....	110	High Street.
Joseph A. Kilbourn.....	271	Park Street.
Thomas B. Enders.....	3	Highland Street.
Charles A. Goodrich.....	5	Haynes Street.
Alfred M. Rowley.....	53	Main Street.
Emil G. Reinert.....	109	Ann Street.
Frederick L. McKee.....	68	Pratt Street.
Edward R. Lampson.....	125	Trumbull Street.
E. Terry Smith.....	70	Cone Street.
William H. FitzGerald.....	904	Main Street.
Emma J. Thompson.....	287	Trumbull Street.
Patrick J. Ryan.....	316	Park Street.
Walter R. Steiner.....	4	Trinity Street.
Ellen P. O'Flaherty.....	140	Main Street.
C. Brewster Brainard.....	98	High Street.
Eckley R. Storrs.....	179	Allyn Street.
Ernest A. Wells.....	2	Garden Street.
William H. Van Strander.....	61	Church Street.

James H. Conklin.....	89	Pratt Street.
Orin R. Witter.....	44	High Street.
Henry E. Adams.....	194	High Street.
William T. Owens.....	703	Main Street.
John C. Pierson.....	50	Windsor Avenue.
Henry F. Stoll.....	75	Pratt Street.
Paul P. Swett.....	803	Main Street.
Mark S. Bradley.....	36	Pearl Street.
Harry C. Clifton.....	98	High Street.
Robert S. Starr.....	75	Pratt Street.
Arthur C. Heublein.....	42	High Street.
Whitefield N. Thompson.....	30	Washington Street.
Maude W. Taylor.....	107	Edwards Street.
James J. Boucher.....	429	Capitol Avenue.
Isaac W. Kingsbury.....	36	Pearl Street.
Edward J. Turbert.....	18	New Park Avenue.
Patrick F. McPartland.....	1341	Main Street.
Thomas F. Welch.....	356	Windsor Avenue.
James C. Wilson.....	164	High Street.
Robert L. Rowley.....	49	Pearl Street.
Horace C. Swan.....	11	Lincoln Street.
Otto G. Wiedman.....	377	Albany Avenue.
Thomas N. Hepburn.....	42	High Street.
Henry A. Martelle.....	112	High Street.
Charles T. Beach.....	686	Main Street.
Edward H. Blair.....		Dillon Court Hotel.
James W. Ward.....	437	Capitol Avenue.
George F. Vail.....	36	Pearl Street.
Clarence M. Hatheway.....	110	High Street.
Albert R. Keith.....	43	Farmington Avenue.
Joseph P. Ryan.....	44	Church Street.
Arthur H. Griswold.....	42	Church Street.
David J. Molumphy.....	517	Main Street.
Morris Tuch.....	1333	Main Street.
John B. Griggs.....	44	High Street.
Andrew M. Outerson.....	104	Church Street.
Charles H. Borden.....	36	Pearl Street.
James F. Rooney.....	308	Park Street.
Henry Bickford.....	111	Ann Street.
Paul Waterman.....	44	High Street.
William B. Bartlett.....	42	High Street.
Howard B. Haylett.....	158	High Street.
Domenico DeBonis.....	94	Windsor Avenue.
Calvin Weidner.....	49	Pearl Street

Jeremiah E. McSweeney.....	6 Wethersfield Avenue
John C. Rowley.....	50 Farmington Avenue.
William E. McClellan.....	125 Trumbull Street.
Henry C. Russ.....	114 Woodland Street.
Dwight W. Tracey.....	5 Wethersfield Avenue.
Albert E. Cobb.....	1 Spring Street.
Abraham Fischer.....	149 Windsor Avenue.
Walter G. Murphy.....	275 Farmington Avenue.
Richard J. Dwyer.....	186 Franklin Avenue.
Howard W. Brayton.....	44 High Street.
Henry G. Jarvis.....	98 High Street.
Philip T. Kennedy.....	64 Ann Street.
Robert M. Yergason.....	902 Main Street.
Leon I. Madden.....	36 Pearl Street.
Amos T. Harrington.....	17 Russ Street.
Julius L. Birdsong.....	110 High Street.
Michael J. Morrissey.....	18 Asylum Street
Frank J. Ronayne.....	66 Church Street.
Edward J. Whalen.....	904 Main Street.
Neil H. Bailey.....	248 Laurel Street.
Robert J. Boyle.....	332 Franklin Street.
James H. Biram.....	98 High Street.
Eliot S. Cogswell.....	122 High Street.
Henry N. Costello.....	61 Belden Street.
William H. Crowley.....	15 Charter Oak Avenue.
Claude V. Flaherty.....	305 Park Street.
Charles E. Jones, Jr.....	98 High Street.
Arthur B. Landry.....	76½ Church Street.
William F. Reardon.....	803 Main Street.
Charles W. Daly.....	381 Capitol Avenue.
Edward A. Deming .....	Asylum and Spring Streets.
F. Arthur Emmett.....	1295 Main Street.
Daniel Cantarow.....	73 Windsor Avenue.
Clinton D. Deming.....	29 Wethersfield Avenue.
William F. Meagher.....	75 Francis Avenue.
Joseph E. Strobel.....	State Sanatorium.
John H. T. Sweet.....	71 Church Street.
Robert L. Waite.....	68 Pratt Street.
Earl B. Carter.....	631 Albany Avenue.
Calvin H. Elliott.....	137 High Street.
Harry L. F. Locke.....	1 Spring Street.
William Dwyer.....	18 Asylum Street.
Thomas H. Gallivan.....	904 Main Street.
Joseph F. O'Brien.....	18 Asylum Street.

Harry S. Reynolds.....	683 Asylum Street.
Donald B. Wells.....	2 Garden Street.
Harry R. Wormley.....	56 Atwood Street.
John F. Sagarino.....	298 Church Street.
A. William Branon.....	112 High Street.
James F. Lynch.....	64 Church Street.
James R. Miller.....	257 Laurel Street.
Sidney H. McPherson.....	Hartford Hospital.
Spottswood H. Parker.....	700 Main Street.
Fannie Radom.....	244 Windsor Avenue.
Thomas W. Worthen.....	36 Pearl Street.
Arthur B. Wright.....	700 Main Street.

**Avon:**

Vernon H. C. Morse.

**Berlin—EAST BERLIN:**

Thomas C. Hodgson.

**KENSINGTON:**

Roger M. Griswold.

Matthew H. Griswold.

**Bloomfield:**

Thomas H. Denne.

**Bristol:**

Arthur S. Brackett.

Benedict N. Whipple.

William W. Horton.

Charles R. Upson.

**Canton—COLLINSVILLE:**

George F. Lewis.

Ralph B. Cox.

George W. Eddy.

S. S. S. Campbell.

**East Hartford:**

Thomas S. O'Connell.

Franklin H. Mayberry.

Edward H. Truex.

Harry J. Onderdonk.

**East Windsor—BROAD BROOK:**

Howard O. Allen.

Harold S. Backus.

**Enfield—THOMPSONVILLE:**

George T. Finch.

Henry G. Varno.

Michael J. Dowd.

John L. Bridge.

Thomas G. Alcorn.

Frank F. Simonton.

**HAZARDVILLE:**

Simon W. Houghton.

**Farmington:**

Stuart E. Phelps.

**UNIONVILLE:**

William T. Morrissey.

**Glastonbury:**

William S. Kingsbury.

**SOUTH GLASTONBURY:**

Harry B. Rising.

**Granby:**

Vincent J. Irwin, Jr.

**Manchester:**

Harry R. Sharpe.

**SOUTH MANCHESTER:**

D. C. Y. Moore.

Thomas H. Weldon.

William S. Gillam.

Noah A. Burr.

Thomas G. Sloan.

George W. May.

William R. Tinker.

Richard W. Rice.

LeVerne Holmes.

**New Britain:**

George Clary.

Michael J. Coholan.

Robert M. Clark.

Hermann Strosser.

Kenneth E. Kellogg.

Thomas E. Reeks.

Ernst T. Fromen.

Catherine H. Travis.

Theodore G. Wright.

Maurice W. Maloney.

John Purney.

George H. Bodley.

Samuel W. Irving.

Joseph H. Potts.

Arvid Anderson.

Charles L. Gillin.

Clifton N. Cooley.

Charles A. Gillin.

Henry T. Bray.

George W. Dunn.

Peter W. Fox.

Michael A. Kinsella.

Harry E. Elcock.

Gertrude J. Kinsella.

Frank Zwisch.

**Plainville:**

John N. Bull.

**Rocky Hill:**

Oran A. Moser.

Julius E. Griswold.

**Simsbury:**

John P. Carver.

**TARIFFVILLE:**

Charles M. Wooster.

**Southington:**

Willard G. Steadman.

William R. Miller.

Leroy A. Hovey.

**Suffield:**

Joseph A. Gibbs.

Arthur P. Noyes.

Harold M. Brown.

**WEST SUFFIELD:**

William E. Caldwell.

William Levy.

**West Hartford:**

Charles O. Purinton.

Edwin B. Lyon.

Ralph W. E. Alcott.

Henry A. Deane.

McLeod C. Wilson.

**Wethersfield:**

Edward G. Fox.

Arthur W. Howard.

**Windsor:**

Howard F. King.

**Windsor Locks:**

Joseph A. Coogan.

William J. Coyle.

Myron P. Robinson.

Richard A. Outerson.

Anna E. Coyle.

Total Number, 259.

## NEW HAVEN COUNTY.

FREDERICK G. GRAVES, M.D., Waterbury, *President*.

GEORGE BLUMER, M.D., New Haven, *Vice President*.

WILLIS E. HARTSHORN, M.D., New Haven, *Secretary*.

*Councilor*—WILLIAM H. CARMALT, M.D., New Haven.

*Censors*—CHARLES W. GAYLORD, M.D., GEORGE BLUMER, M.D.,

WALTER L. BARBER, M.D.

Annual Meeting, Third Thursday in April; Semi-Annual, Third Thursday in October.

## New Haven:

Frederick Bellosa.....	125 Sherman Avenue.
WILLIAM H. CARMALT.....	261 St. Ronan Street.
F. H. Whittemore.....	69 Elm Street.
C. P. Lindsley.....	59 College Street.
Henry Fleischner.....	928 Grand Avenue.
MAX MAILHOUSE.....	105 Elm Street.
M. C. O'Connor.....	882 State Street.
C. E. Park.....	42 Elm Street.
Gustavus Eliot.....	209 Church Street.
J. E. Stetson.....	Union League Club.
J. F. Luby.....	1210 Chapel Street.
W. W. Hawkes.....	31 High Street.
F. H. Wheeler.....	27 Perkins Street.
F. W. Wright.....	48 Pearl Street.
O. T. Osborne.....	252 York Street.
L. C. Peckham.....	141 Greene Street.
L. S. DeForest.....	335 Orange Street.
Henry L. Swain.....	232 York Street.
Mary B. Moody.....	Sherland Avenue.
G. F. Converse.....	1 Whalley Avenue.
C. J. Foote.....	26 Elm Street.
STEPHEN J. MAHER.....	212 Orange Street.
Louis B. Bishop.....	356 Orange Street.
H. W. Ring.....	185 Church Street.
W. C. Welch.....	59 College Street.
A. O. Baribault.....	209 Chapel Street.
Rollin McNeil.....	New York State.
E. M. McCabe.....	287 Orange Street.

James M. Reilly.....	337	Cedar Street.
C. E. Skinner.....	67	York Square.
B. Austin Cheney .....	59	College Street.
Charles A. Tuttle.....	196	York Street.
H. B. Ferris.....	395	St. Ronan Street.
Leonard W. Bacon.....	113	Whitney Avenue.
P. S. Robinson.....	164	Grand Avenue.
Arthur N. Alling.....	257	Church Street.
R. A. McDonnell.....	1142	Chapel Street.
E. P. Pitman.....	52	Sylvan Avenue.
Isaac N. Porter.....	198	Dixwell Avenue.
E. H. Arnold.....	46	York Square.
Robert E. Peck.....		Elm City Private Hospital.
William C. Wurtenberg.....	28	Elm Street.
F. N. Sperry.....	59	College Street.
W. F. Verdi.....	13	Elm Street.
C. J. Bartlett.....	150	York Street.
M. D. Slattery.....	566	Howard Avenue.
W. H. Sanford.....	650	Orange Street.
Leonard C. Sanford.....	347	Temple Street.
Willis H. Crowe.....	106	Whalley Avenue.
C. H. Robbins.....	326	Grand Avenue.
L. M. Gompertz.....	1195	Chapel Street.
Alfred G. Nadler.....	377	Orange Street.
Frederick C. Bishop.....	1241	Chapel Street.
James H. J. Flynn.....	840	Howard Avenue.
Frank A. Kirby.....	355	Whalley Avenue.
John F. Sullivan.....	205	Blatchley Avenue.
Edward F. McIntosh.....	220	Park Street.
Nicola Mariani.....	119	Greene Street.
James S. Maher.....	215	Orange Street.
A. W. Marsh.....	1012	Whalley Avenue.
W. N. Winne.....	1020	Whalley Avenue.
William S. Barnes.....	193	York Street.
Clarence L. Kilbourn.....	202	Blatchley Avenue.
Henry H. Smith.....	43	Elm Street.
Julia E. Teele.....	206	Hamilton Street.
Harry L. Welch.....	94	College Street.
Thomas V. Hynes.....	1441	Chapel Street.
H. M. Steele.....	226	Church Street.
Willis E. Hartshorn.....	1138	Chapel Street.
Richard F. Rand.....	246	Church Street.
Edward S. Moulton.....	237	York Street.
Timothy F. Cohane.....	530	Howard Avenue.

W. J. Butler.....	712	Howard Avenue.
Louis A. Notkins.....	700	Howard Avenue.
Francis H. Reilly.....	286	Columbus Avenue.
Nelson A. Ludington.....	1252	Chapel Street.
D. M. Lewis.....	36	High Street.
Seymour L. Spier.....	348	Crown Street.
William H. Bean.....	40	Pleasant Street.
E. Reed Whittemore.....	69	Elm Street.
Alice P. Ford.....	1400	Chapel Street.
Frank B. Standish.....	199	York Street.
Carl W. Henze.....	466	Orange Street.
Eugene M. Blake.....	55	Trumbull Street.
George Blumer.....	64	Trumbull Street.
Samuel M. Hammond.....	185	Church Street.
Archibald C. Herbert.....	256	McKinley Avenue.
Mary P. Dole.....	15	Elm Street.
Treby W. Lyon.....	1210	Dixwell Avenue.
Frederick P. Lane.....	524	Chapel Street.
Harold S. Arnold.....	122	College Street.
Allen R. Diefendorf.....	129	Church Street.
William J. Barrett.....	63	Olive Street.
Herman P. Hessler.....	323	George Street.
Millard F. Allen.....	65	Dixwell Avenue.
Frederick G. Beck.....	199	York Street.
Raynham Townshend.....	233	Church Street.
Jeremiah J. Cohane.....	59	College Street.
Frank L. Phillips.....	413	Temple Street.
Charles Fitzgerald.....	220	Orange Street.
Charles E. Sanford.....	150	Shelton Avenue.
John A. Murphy.....	28	Edwards Street.
James F. Rogers.....	378	George Street.
Wilder Tileston.....	424	Temple Street.
Marvin M. Scarbrough.....	105	College Street.
Joseph I. Linde.....	163	York Street.
Jeremiah B. Sullivan.....	274	Dixwell Avenue.
Robert G. Tracy.....	493	Howard Avenue.
Joseph M. Flint.....	320	Temple Street.
Jacques L. Buttner.....		In France.
Hugh F. Keating.....	619	Howard Avenue.
Alexander Bergman.....	49	Howe Street.
Albertus K. Boardman.....	411	Forbes Avenue.
Samuel J. Goldberg.....	314	George Street.
Israel Kleiner.....	193	York Street.
Abram A. Hershman.....	6	High Street.

George Goldman.....	1	Howe Street.
William P. Lang.....	1223	Chapel Street.
Wilda E. Butler.....	223	York Street.
Wm. C. McGuire.....	106	Park Street.
Alexander L. Prince.....	150	York Street.
John W. Churchman.....	59	College Street.
Stuart E. Skiff.....	1194	Chapel Street.
Robert J. Ferguson.....	59	College Street.
Huggard W. Nugent.....	432	Temple Street.
George R. James.....	686	State Street.
Max R. Smirnow.....	850	Howard Avenue.
Charles W. Comfort.....	1193	Chapel Street.
Francesco D'Agostino.....	621	Chapel Street.
Harry S. Reynolds.....	136	Whalley Avenue.
Aubry L. Magill.....	68	Dixwell Avenue.
Thomas H. Russell, Jr.....	411	Temple Street.
Adelaide Lambert.....	86	Broadway.
James A. Harten.....	95	Olive Street.
Marvin Smith.....	73	Pearl Street.
Gabriel Jackowitz.....	312	Orange Street.
Alva G. Provost.....	286	Dixwell Avenue.
Paul R. Stetson.....	154	Shelton Avenue.
Joseph B. Monahan.....	631	Howard Avenue.
Charles T. Flynn.....	531	Winchester Avenue.
Walter C. Skiff.....	1184	Chapel Street.
Charles H. Carroll.....	236	Grand Avenue.
Grover C. Sweet.....	710	Howard Avenue.
Joseph V. Esposito.....	96	Greene Street.
Harry A. Conte.....	158	St. John Street.
John E. Lane.....	59	College Street.
Robert F. Scholl.....	485	Ferry Street.
Arthur R. Weed.....	199	York Street.
Herman R. White.....	416	Oak Place.
Maxwell Lear.....	33	Sylvan Avenue.
Fred W. Comstock.....	578	Howard Avenue.
Frederick H. Hynes.....	196	York Street.
Louis H. Levy.....	197	York Street.
William L. Sheahan, Jr.....	73	Sherman Avenue.
William T. Bull.....	59	College Street.
Herbert K. Thoms.....	419	Temple Street.
Milton L. Dryfus.....	86	Congress Avenue.
Harry E. Stewart.....	1445	Chapel Street.
J. Morris Slemmons.....	150	York Street.
Arthur Morse.....	71	College Street.
Thomas H. Young.....	215	Winchester Avenue.

Ernest Segnalla.....	516 Chapel Street.
Leonard C. Whiting.....	40 Whalley Avenue.
Isao Hirata.....	220 Orange Street.
Anthony J. Mendillo.....	26 Elm Street.
Frank J. McGuire.....	26 Elm Street.
Francis E. Gessner.....	35 Elm Street.
Donald W. Porter.....	97 Grove Street.
Thomas A. O'Brien.....	42 Dwight St.
Genesis F. Carelli.....	541 Chapel Street.
Albert L. Hendricks.....	26 Trumbull Street.
William P. Baldwin.....	1145 Chapel Street.
William P. J. Burke.....	288 Hamilton Street.
William J. Cooney.....	342 Grand Avenue.
William H. Morriss.....	New Haven Hospital.

**Ansonia:**

Louis E. Cooper.  
 Louis H. Wilmot.  
 Edward K. Parmelee.  
 Burton I. Tolles.  
 William H. O'Neil.  
 C. H. Mercer.  
 Fred J. Peck.  
 Michael S. Aaronson.

**Branford:**

C. W. Gaylord.  
 A. J. Tenney.  
 Arthur S. McQueen.

**Cheshire:**

Edward W. Karrman.

**Derby:**

Frank N. Loomis.  
 Royal W. Pinney.  
 Edward O'R. Maguire.  
 Charles T. Baldwin.  
 D. A. Richardson.  
 Michael A. Parlato.  
 Wm. H. Treat.  
 E. T. Sharpe.  
 Thomas F. Plunkett.  
 Michael J. Sheahan.

**East Haven:**

Charles W. Holbrook.

**Guilford:**

A. W. Murless.  
 R. B. West.  
 Frederic DeW. Smith.

**Hamden:**

Walter S. Lay.

**MOUNT CARMEL:**

George H. Joslin.

**Madison:**

Milo P. Rindge.

**Meriden:**

N. Nickerson.  
 A. W. Tracy.  
 E. T. BRADSTREET  
 J. D. Eggleston.  
 Edward W. Smith.  
 A. H. Fenn.  
 E. W. Pierce.  
 S. D. Otis.  
 F. P. Griswold.  
 E. D. Hall.  
 H. A. Meeks.  
 J. W. H. La Pointe.

Joseph A. Cooke.  
 Louis F. Wheatley.  
 Michael J. Sullivan.  
 H. DeForest Lockwood.  
 James B. Dinnan.  
 David P. Smith.  
 John T. O'Brien.  
 Leslie A. Wilson.  
 Thomas P. Murdock.  
 Raymond V. Quinlan.

**Milford:**

John W. Ives.  
 W. J. H. Fischer.  
 Louis J. Pons.  
 Carlton K. Heady.

**Naugatuck:**

T. M. Bull.  
 William J. Delaney.  
 Edwin H. Johnson.  
 John J. Carroll.  
 James W. Robbins.  
 Walter A. Reilly.  
 Walter I. Baker.  
 Frank J. Tuttle.  
 Chester N. Woodford.  
 Michael F. Claffey.

**North Haven:**

R. B. Goodyear.  
 G. S. Higgins.

**MONTOWESE:**

Ralph W. Nichols.

**Orange—WEST HAVEN:**

J. F. Barnett.  
 Charles D. Phelps.  
 Victor A. Kowalewski.  
 Joseph L. Gilmore.  
 Ralph DeB. Clarke.  
 Platt H. Rogers.

**Seymour:**

F. A. Benedict.  
 E. W. Davis.

Edward R. Harvey.  
 Henry W. Beckwith.

**Wallingford:**

William S. Russell.  
 William P. Wilson.  
 Caroline N. Stevens.  
 David R. Lyman.  
 John H. Buffum.  
 J. David McGaughey.  
 Donald G. Russell.  
 C. F. Smith.

**Waterbury:**

F. E. Castle.  
 Walter L. Barber.  
 C. W. S. Frost.  
 C. S. RODMAN.  
 J. M. Benedict.  
 Carl E. Munger.  
 B. A. O'Hara.  
 John F. Hayes.  
 A. A. Crane.  
 P. T. O'Connor.  
 John D. Freney.  
 C. A. Hamilton.  
 George O. Robbins.  
 Charles H. Brown.  
 Edward W. Goodenough.  
 M. L. Cooley.  
 F. G. Graves.  
 James L. Moriarty.  
 George W. Russell.  
 D. J. Maloney.  
 Anthony P. Vastola.  
 Robert A. Bonner.  
 Raymond J. Quinn.  
 John H. McGrath.  
 P. S. Anderson.  
 John J. Egan.  
 William H. Licht.  
 Thomas F. Healey.  
 Isacco DeLuise.  
 Michael D. Riordan.

Charles A. Monagan.  
 H. G. Anderson.  
 H. E. Hungerford.  
 Nelson A. Pomeroy.  
 Thomas J. Lally.  
 P. J. Dwyer.  
 L. J. Thibault.  
 William A. Goodrich.  
 John E. Farrell.  
 Charles Engelke.  
 Thomas J. McLarney.  
 A. C. Swenson.  
 J. J. McLinden.  
 Michael J. Donahue.  
 Egbert L. Smith.  
 John J. Gailey.  
 Isabel Cowan.  
 Arthur Variell.  
 Aletta L. B. Deming.  
 Theodore F. Bevans.

Arthur F. McDonald.  
 Jacob Gancher.  
 Henry K. Hine.  
 Michael J. Lawlor.  
 Edmund Russell.  
 John W. Fruin.  
 Walter L. Barber, Jr.  
 Patrick J. Brennan.  
 Edward A. Herr.  
 T. G. Kilmartin.  
 Daniel J. Byrne.  
 Edward H. Kirschbaum.  
 Eugene F. Callender.  
 William M. Good.  
 Caroline R. Conkey.  
 Philip Frank.  
 Raymond H. Ryder.  
 Ernest H. Johnston.  
 Edmund Spicer.  
 Jacques H. Green.

Total Number, 289.

### NEW LONDON COUNTY.

E. OLIVER WINSHIP, M.D., New London, *President*.

GEORGE THOMPSON, M.D., Taftville, *Vice President*.

LEONE F. LAPIERRE, M.D., Norwich, *Secretary*.

*Councilor*—PATRICK J. CASSIDY, M.D., Norwich.

*Censors*—EDMUND P. DOUGLASS, M.D., C. B. GRAVES, M.D.,  
 C. C. GILDERSLEEVE, M.D.

Annual Meeting, First Thursday in April; Semi-Annual, First  
 Thursday in October.

#### East Lyme—NIANTIC:

Frederick H. Dart.  
 Edward Atkinson.

#### Griswold—JEWETT CITY:

George H. Jennings.  
 Alphonse Fontaine.  
 (Moosup)  
 J. H. McLaughlin.

#### Groton:

Edmund P. Douglass.  
 Frank W. Hewes.  
 Charles G. Barnum.

#### NOANK:

William M. Hill.

#### Montville:

Frank E. Wilson.

**UNCASVILLE:**

Morton E. Fox.

**COLCHESTER:**

Edward J. Howland.

**New London:**

JOHN G. STANTON.

Charles B. Graves.

Harold H. Heyer.

Carlisle F. Ferrin.

Thomas W. Rogers.

J. Clifton Taylor.

Harry M. Lee.

Emmanuel A. Henkle.

Edwin C. Chipman.

Gurdon S. Allyn.

Daniel Sullivan.

Joseph M. Ganey.

James L. Harrington.

Ernest O. Winship.

William D. Cronin.

Frank M. Dunn.

Stuart J. Lawson.

James F. Young.

George P. Cheney.

Ross E. Black.

John T. Black.

**Lyne—OLD LYME:**

Ellis K. Devitt.

**Lebanon:**

Edwin L. Danielson.

**Norwich:**

Patrick Cassidy.

Edward P. Brewer.

Newton P. Smith.

Witter K. Tingley.

William T. Browne.

James J. Donahue.

Harry E. Higgins.

Charles H. Perkins.

Dennis J. Shahan.

Patrick J. Cassidy.

Edward J. Brophy.

Leone F. LaPierre.

William B. Casey.

Chas. C. Gildersleeve.

Arnand J. LaPierre.

Louis F. Cassidy.

Robert R. Agnew.

Hugh B. Campbell.

Thurman P. Maine.

John D. Donahue.

John J. Donahue.

John W. Callahan.

Albert C. Freeman.

W. T. Driscoll.

John S. Blackmar.

**TAFTVILLE:**

George Thompson.

Louis I. Pratte.

**YANTIC:**

Herbert H. Howe.

**Sprague—BAL TIC:**

James G. Burr.

**Stonington:**

George D. Stanton.

Charles M. Williams.

Robert E. Harrington.

(No. Stonington)

**MYSTIC:**

Louis M. Allyn.

William H. Gray.

Alexander M. Purdy.

Martin L. Smail.

**OLD MYSTIC:**

Albert T. Chapman.

**Waterford:**

George M. Minor.

Total Number, 73.

## FAIRFIELD COUNTY.

FRANK H. BARNES, M.D., Stamford, *President*.

FRANK M. TUKEY, M.D., Bridgeport, *Vice President*.

ELI B. IVES, M.D., Bridgeport, *Secretary*.

*Councilor*—SAMUEL M. GARLICK, M.D., Bridgeport.

*Censors*—HARRIS F. BROWNLEE, M.D., GEORGE H. NOXON, M.D., Darien,  
FRANK W. STEVENS, M.D.

Annual Meeting, Second Tuesday in April, at Bridgeport;

Semi-Annual, Second Tuesday in October.

## Bridgeport:

GEORGE L. PORTER.....	372 State Street.
F. M. Wilson.....	834-836 Myrtle Avenue.
J. W. Wright.....	808-810-812 Myrtle Avenue.
Charles C. Godfrey.....	340 State Street.
S. M. GARLICK.....	474 State Street.
Henry Blodget.....	819 Myrtle Avenue.
J. C. Lynch.....	826 Myrtle Avenue.
G. W. Osborn.....	888 Broad Street.
J. R. Topping.....	349 Noble Avenue.
B. W. White.....	477 State Street.
Jacob May.....	1816 North Avenue.
George B. Cowell.....	409 Noble Avenue.
George E. Ober.....	632 Kossuth Street.
D. C. DeWolfe.....	516 Fairfield Avenue.
Henry S. Miles.....	417 State Street.
Fessenden L. Day.....	819 Myrtle Avenue.
Edward Fitzgerald.....	526 East Washington Avenue.
George S. Ford.....	527 State Street.
Frank M. Tukey.....	429 State Street.
William W. Gray.....	346 West Avenue.
James D. Gold.....	839 Myrtle Avenue.
Reuben A. Lockhart.....	760 Washington Avenue.
Frederick J. Adams.....	325 Fairfield Avenue.
W. J. O'Hara.....	361 Barnum Avenue.
David M. Trecartin.....	860 Park Avenue.
Harry W. Fleck.....	897 Lafayette Street.
Thomas L. Ellis.....	332 West Avenue.
Charles R. Townsend.....	446 State Street.
Herbert E. Smyth.....	376 John Street.
J. Murray Johnson.....	385 State Street.
Elmer F. Blank.....	387 Noble Avenue.
Irving L. Nettleton.....	775 Washington Avenue.

Edwards M. Smith.....	340	State Street.
Frank L. Smith.....	2178	Main Street.
David B. Wason.....	329	West Avenue.
Dorland Smith.....	834	Myrtle Avenue.
Frank W. Stevens.....	829	Myrtle Avenue.
George H. Warner.....	849	Myrtle Avenue.
Henry E. Waterhouse.....	426	State Street.
Robert J. Lynch.....	52	Courtland Street.
Charles J. Leverty.....	469	State Street.
Philip W. Bill.....	411	State Street.
F. Winthrop Pyle.....	528	State Street.
Eli B. Ives.....	561	State Street.
Frank H. Coops.....	411	State Street.
William C. Watson.....	446	Stratford Avenue.
Herman S. Schulz.....	390	State Street.
Nathan T. Pratt.....	1221	Stratford Avenue.
Charles N. Haskell.....	525	State Street.
Morris J. Greenstein.....	107	Benham Avenue.
Philip J. Curran.....	469	State Street.
Giovanni Formichelli.....	48	Walter Street.
Robert B. Keane.....	90	N. Washington Avenue.
William C. Bowers.....	336	State Street.
Charles W. Gardner.....	449	State Street.
Charles H. Sprague.....	168	West Liberty Street.
Daniel C. Patterson.....	819	Myrtle Avenue.
George W. Hawley.....	871	Park Avenue.
Florence A. Sherman.....	528	State Street.
William A. LaField.....	233	Fairfield Avenue.
Abraham Bernstein.....	346	State Street.
Nicola M. Sansome.....	519	Pembroke Street.
Benj. B. Finklestone.....	346	State Street.
Bronislaw L. Smykowski.....	405	Barnum Avenue.
Wm. L. Weadon.....	810	Myrtle Avenue.
Henry B. Lambert.....	411	State Street.
Fraray Hale.....	477	State Street.
William H. Curley.....	697	Warren Street.
John F. Krasynne.....	720	Arctic Street.
Michael J. Rowe.....	1479	Main Street.
George J. Schuele.....	485	Noble Avenue.
John F. Shea.....	1246	East Main Street.
Andrew McQueeney.....	700	Noble Avenue.
Thomas J. Roche.....	432	State Street.
Edward F. McGovern.....	390	State Street.
H. LeBaron Peters.....	233	Fairfield Avenue.

Hermann Duesing.....	1169 East Main Street.
Arthur Scrimgeour.....	701 Warren Street.
Benjamin I. Hart.....	323 State Street.
Harold M. Clarke. ....	350 Park Avenue.
John F. Flynn.....	Franklin Street and Wash. Avenue.
Daniel J. McCarthy.....	778 Washington Avenue.
John J. MacDonald.....	905 North Avenue.
Joseph H. Beaudry.....	835 State Street.
John H. Finnegan.....	1116 Stratford Avenue.
Paul D. Hippolitus.....	683 East Main Street.
Robert D. Roller, Jr.....	810 Myrtle Avenue.
Daniel T. Banks.....	254 East Main Street.
Joseph Cohen.....	1106 Stratford Avenue.
Edward W. Dupee.....	733 State Street.
Carl J. Gade.....	527 State Street.
Daniel Patrick Griffen.....	1350 East Main Street.
Thomas F. Healy.....	25 Yale Street.
George B. Garlick.....	474 State Street.
James L. Gilday.....	952 State Street.
Martin I. Horn.....	1963 Main Street.
John F. Quinn.....	225 Colorado Avenue.
Upton S. Reich.....	2162 North Main Street.
Thomas F. Scanlon.....	430 Barnum Avenue.
Maurice Steinberger.....	617 Hancock Avenue
Edwin B. Weldon.....	327 Broad Street.

**Bethel:**

A. E. Barber.  
George D. Wight.

**Brookfield—BROOKFIELD CENTER:**

Charles A. Ryder.

**Danbury:**

E. A. Stratton.  
W. S. Watson.  
D. CHESTER BROWN.  
H. F. Brownlee.  
George E. Lemmer.  
Charles F. Craig.  
William F. Gordon.  
William T. Bronson.

Richard M. English.  
Paul U. Sunderland.  
E. J. S. Scofield.  
Joseph W. Walsh.  
Howard D. Moore.  
Samuel F. Mullins.  
George E. Thielcke.  
Arthur C. Smith.

**Darien:**

George H. Noxon.

**NOROTON:**

Albert L. House.  
Harold E. Hoyt.

**Fairfield:**

W. H. Donaldson.

**GREENFIELD HILL :**

M. V. B. Dunham.

**SOUTHPORT :**

Charles E. Hyde.

**Greenwich:**

Frank Terry Brooks.

Fritz C. Hyde.

William L. Griswold.

Alvin W. Klein.

John A. Clarke.

William Burke.

Harriet B. Hyde.

Edward O. Parker.

Don J. Knowlton.

**COS COB :**

Thomas J. Bergin.

**RIVERSIDE :**

Charles Smith.

**SOUND BEACH :**

Sarah E. Finch.

Albert E. Austin.

**Huntington—SHELTON :**

GOULD A. SHELTON.

Wm. S. Randall.

Harry L. Stephen.

Francis I. Nettleton.

John E. Black.

William M. Stockwell.

**Monroe—STEPNEY DEPOT :**

Francis J. Wales.

**STEPNEY :**

Geo. A. Smith.

**New Canaan:**

Myre J. Brooks.

Edmund J. O'Shaughnessy.

Charles B. Keeler.

Albert A. Wheelock.

**Norwalk:**

James G. Gregory.

James A. Meek.

S. H. Huntington.

William J. Tracey.

Arthur R. Turner.

Jesse M. Coburn.

Walter Hitchcock.

Ward S. Gregory.

Henry K. W. Kellogg.

George E. Cram.

**SOUTH NORWALK :**

C. G. Bohannan.

L. M. Allen.

Henry C. Sherer.

Jean Dumortier.

Francis E. Burnell.

**Redding:**

Ernest H. Smith.

**Ridgefield:**

Russell W. Lowe.

William H. Allee.

Benn A. Bryon.

**Stamford:**

A. M. Hurlbut.

Samuel Pierson.

Alfred C. Henderson.

James J. Costanzo.

A. N. Phillips.

F. Schavoir.

R. G. Philip.

George Sherrill.

W. E. Rice.

George R. Hertzberg.

J. J. Cloonan.

Dean Foster.

Donald R. MacLean.  
 Frank H. Barnes.  
 John H. Staub.  
 Richard L. Bohannan.  
 John F. Harrison.  
 Ralph W. Crane.  
 W. T. Godfrey.  
 Charles L. Dichter.  
 Samuel M. Shirk.  
 P. P. Van Vleet.  
 Julius Nemoitin.  
 Charles H. B. Meade.  
 J. Wait Avery.  
 I. F. Carroll.  
 Raymond R. Gandy.

**Sandy Hook:**

Walter H. Kiernan.

**Stratford:**

W. B. Cogswell.  
 G. F. Lewis.  
 D. Howland.  
 Rollin A. Curtis.

**Weston—LYONS PLAIN:**

F. Gorham.

**Westport:**

F. Powers.  
 F. D. Ruland.  
 J. M. Nolan.  
 F. H. McLaury.  
 E. S. Brodsky.

**GREEN'S FARMS:**

David W. McFarland.

Total Number, 209.

**WINDHAM COUNTY.**

MARGUERITE J. BULLARD, M.D., Putnam, *President*.

LOUIS I. MASON, M.D., Willimantic, *Vice President*.

LAURA HEATH HILLS, M.D., Willimantic, *Secretary and Treasurer*.

*Councilor*—SELDON B. OVERLOCK, M.D., Pomfret.

*Censors*—E. F. PERRY, M.D., R. ROBINSON, M.D., CHARLES HILL, M.D.

Annual Meeting, Third Thursday in April; Semi-Annual  
 Meeting, Third Thursday in October.

**Brooklyn:**

A. H. Tanner.

**Hampton:**

Arthur D. Marsh.

**Killingly:**

George Barnes.

**DANIELSON:**

RIENZI ROBINSON.  
 W. H. Judson.  
 George M. Burroughs.

**EAST KILLINGLY:**

Charles E. Hill.

**Plainfield:**

Arthur A. Chase.

**CENTRAL VILLAGE:**

James L. Gardner.

**MOOSUP:**

Charles N. Allen.  
 W. W. Adams.  
 Francis Downing.

**Pomfret:**

S. B. OVERLOCK.

**Putnam:**

John B. Kent.

F. A. Morrell.

Omer LaRue.

Warren W. Foster.

Marguerite J. Bullard.

Edward F. Perry.

**Thompson:**

Robert C. Paine.

**Willimantic:**

Frederick Rogers.

T. R. Parker.

R. C. White.

Laura H. Hills.

Joseph A. Girouard.

Clarence E. Simonds.

Owen O'Neil.

Charles H. Girard.

J. H. Egbert.

Louis I. Mason.

W. P. Stuart Keating.

Charles A. Jenkins.

Josaphat Gaucher.

Fred M. Smith.

**Windham:**

F. E. Guild.

**Woodstock—EAST WOODSTOCK:**

Ernest R. Pike.

Total Number, 36

**LITCHFIELD COUNTY.**DAVID D. REIDY, M.D., Winsted, *President*.CHARLES R. TURKINGTON, M.D., Litchfield, *Vice President*.HARRY B. HANCHETT, M.D., Torrington, *Secretary*.*Councilor*—ELIAS PRATT, M.D., Torrington.*Censors*—W. S. HULBURT, M.D., R. S. GOODWIN, M.D.,  
F. S. SKIFF, M.D.Annual Meeting, Fourth Tuesday in April; Semi-Annual, First  
Tuesday in October.**Canaan—FALLS VILLAGE:**

Francis S. Skiff.

Thomas J. Shannon.

**Cornwall—WEST CORNWALL:**

Joseph Robinson.

**Goshen:**

J. H. North.

**Litchfield:**

John L. Buel.

Charles N. Warner.

Charles H. Turkington.

R. A. Marcy.

**New Hartford:**

Chester F. English.

**New Milford:**

George E. Staub.  
George H. Wright.  
B. E. Bostwick.

**Norfolk:**

John C. Kendall.  
I. L. Hamant.  
Lucius D. Bulkley.  
Frederick S. Dennis.  
A. W. Pinney.

**North Canaan—CANAAN:**

John G. Adam.  
Charles W. Camp.  
Frank H. Lee.  
Henry S. Turrill.

**Plymouth—TERRYVILLE:**

W. W. Wellington.  
Richard J. Lawton.  
Harold B. Woodward.

**Roxbury:**

Evans D. Russell.

**Salisbury—LAKEVILLE:**

William Bissell.  
William B. Bissell.  
Charles T. LaMoure.

**Sharon:**

Clarence W. Bassett.  
Jerome S. Chaffee.

**Thomaston:**

Robert Hazen.  
Ralph S. Goodwin.  
James J. Kane.

**Torrington:**

William L. Platt.  
Elias Pratt.  
Jerome S. Bissell.  
Charles H. Carlin.  
Sanford H. Wadhams.  
H. D. Moore.  
William J. Hogan.  
Timothy M. Ryan.  
Harry B. Hanchett.

**Washington:**

Frederic W. Wersebe.  
Harry E. Stewart.

**Watertown:**

Ernest K. Loveland.  
James S. Martin.

**Winchester—WINSTED:**

Edward L. Pratt.  
William S. Hulbert.  
Salmon J. Howd.  
David D. Reidy.  
Ernest R. Kelsey.  
Maurice J. Reidy.  
Joseph D. Hartnett.

**WEST WINSTED:**

William S. Richards.

**Woodbury:**

William G. Reynolds.  
Howard S. Allen.

Total Number, 56.

## MIDDLESEX COUNTY.

KATE C. MEAD, M.D., Middletown, *President*.

CHARLES E. BUSH, M.D., Cromwell, *Vice President*.

JAMES H. KINGMAN, M.D., Middletown, *Secretary*.

*Councilor*—GEORGE N. LAWSON, M.D., Middle Haddam.

*Censors*—CHARLES E. STANLEY, M.D., CUSHMAN A. SEARS, M.D.,

FREDERICK B. BRADEEN, M.D.

Annual Meeting, Second Thursday in April; Semi-Annual, Second Thursday in October.

## Chatham—MIDDLE HADDAM:

George N. Lawson.

## EAST HAMPTON:

Albert Field.

Frederick T. Fitch.

## Chester:

Fred S. Smith.

## Clinton:

David A. Fox.

## Cromwell:

FRANK K. HALLOCK.

Charles E. Bush.

Charles A. McKendree.

(N. Y. City.)

## Durham:

Charles E. Zink.

## East Haddam:

M. W. Plumstead.

## Essex:

Frederick B. Bradeen.

Charles C. Davis.

## Haddam:

Leonard J. Lowe.

## Middletown:

William E. Fisher.

Charles E. Stanley.

John E. Bailey.

Arthur J. Campbell.

Arthur B. Coleburn.

J. Francis Calef.

John E. Loveland.

Kate C. Mead.

Daniel A. Nolan.

John H. Mountain.

Charles B. Young.

Jessie W. Fisher.

James T. Mitchell.

James H. Kingman.

Thomas P. Walsh.

James Murphy.

James M. Keniston.

Louis R. Brown.

Hamilton Rinde.

Sidney A. Lord.

Edgar Fauver.

William M. Kenna.

(Central Valley, N. Y.)

Michael D. Murphy.

Louis Simonson.

John L. Burnham.

C. Floyd Haviland.

Sheldon S. S. Campbell.

**Old Saybrook:**

Calista V. Luther.  
Irwin Grannis.

**Portland:**

Cushman A. Sears.  
E. J. Lynch (Shelton).

Frank E. Potter.  
Charles B. Chedel.

**Saybrook—DEEP RIVER:**

Howard T. French.  
Arthur M. Pratt.

Total Number, 48

**TOLLAND COUNTY.**

THOMAS F. O'LOUGHLIN, M.D., Rockville, *President*.

DONALD L. ROSS, M.D., Mansfield Depot, *Vice President*.

ELI P. FLINT, M.D., Rockville, *Secretary and Treasurer*.

*Councilor*—THOMAS F. ROCKWELL, M.D., Rockville.

*Censors*—T. F. O'LOUGHLIN, M.D., JOHN P. HANLEY, M.D.,  
FREDERICK W. WALSH, M.D.

Annual Meeting, Third Tuesday in April; Semi-Annual, Third  
Tuesday in October.

**Coventry:**

Isaac P. Fiske.

**SOUTH COVENTRY:**

WILLIAM L. HIGGINS.

**Hebron:**

Cyrus H. Pendleton.

**Mansfield—MANSFIELD DEPOT:**

Donald L. Ross.  
John F. Hackett.

**Somers:**

Alonzo L. Hurd:

**Stafford—STAFFORD SPRINGS:**

CYRUS B. NEWTON.

Frank L. Smith.  
James Stretch.  
John P. Hanley.

**Tolland:**

Willard N. Simmons.

**Vernon—ROCKVILLE:**

Frederick Gilnack.  
Thomas F. Rockwell.  
Eli P. Flint.  
Thomas F. O'Loughlin.  
Frederick W. Walsh.  
Wright B. Bean.  
F. M. Dickinson.

Total Number, 19.

**OFFICERS OF THE CONNECTICUT STATE MEDICAL  
SOCIETY FROM ITS ORGANIZATION IN 1792  
TO THE PRESENT TIME.\***

**PRESIDENTS.**

1792	Leverett Hubbard.	1876	Ashbel W. Barrows.
1794	Eneas Munson.	1877	Robert Hubbard.
1801	James Potter.	1878	Charles M. Carleton.
1803	Thomas Mosley.	1879	Alfred R. Goodrich.
1804	Jeremiah West.	1880	Gideon L. Platt.
1807	John R. Watrous.	1881	William Deming.
1812	Mason F. Cogswell.	1882	William G. Brownson.
1822	Thomas Hubbard.	1883	Elisha B. Nye.
1827	Eli Todd.	1884	Benjamin N. Comings.
1829	John S. Peters.	1885	Elijah C. Kinney.
1832	William Buel.	1886	Thomas H. Hills.
1834	Thomas Miner.	1887	Francis Bacon.
1837	Silas Fuller.	1888	George L. Porter.
1841	Elijah Middlebrook.	1889	Orlando Brown.
1843	Luther Ticknor.	1890	Melancthon Storrs.
1846	Archibald Welch.	1891	Charles A. Lindsley.
1849	George Sumner.	1892	Cyrus B. Newton.
1851	Rufus Blakeman.	1893	Francis D. Edgerton.
1853	Richard Warner.	1894	Francis N. Braman.
1854	William H. Cogswell.	1895	Seth Hill.
1856	Benjamin H. Catlin.	1896	Rienzi Robinson.
1858	Ashbel Woodward.	1897	Ralph S. Goodwin.
1861	Josiah G. Beckwith.	1898	Henry P. Stearns.
1863	Ebenezer K. Hunt.	1899	Charles S. Rodman.
1865	Nathan B. Ives.	1900	Leonard B. Almy.
1866	Isaac G. Porter.	1901	John H. Grannis.
1867	Charles Woodward.	1902	Gould A. Shelton.
1868	Samuel B. Beresford.	1903	Samuel B. St. John.
1869	Henry Bronson.	1904	William H. Carmalt.
1870	Charles F. Sumner.	1905	{ †Edward H. Welch.
1871	Gurdon W. Russell.		{ Nathaniel E. Wordin.
1872	Henry W. Buel.	1906	William L. Higgins.
1873	Ira Hutchinson.	1907	Everett J. McKnight.
1874	Lowell Holbrook.	1908	Seldom B. Overlock.
1875	Pliny A. Jewett.	1909	Samuel D. Gilbert.

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\* Prepared for the Secretary by Dr. J. B. Lewis, Hartford.

† Resigned.

1910	Frank K. Hallock.	1914	{ ‡Oliver C. Smith.
1911	John G. Stanton.		{ Stephen J. Maher.
1912	E. T. Bradstreet.	1915	Max Mailhouse.
1913	D. Chester Brown.	1916	Samuel M. Garlick.

## VICE PRESIDENTS.

1792	Eneas Munson.	1872	Ira Hutchinson.
1794	Elihu Tudor.	1873	Lowell Holbrook.
1796	James Potter.	1874	Pliny A. Jewett.
1801	Thomas Mosley.	1875	Ashbel W. Barrows.
1803	Jeremiah West.	1876	Robert Hubbard.
1804	Jared Potter.	1877	Charles M. Carleton.
1806	John R. Watrous.	1878	Alfred R. Goodrich.
1807	Mason F. Cogswell.	1879	Gideon L. Platt.
1812	John Barker.	1880	William Deming.
1813	Timothy Hall.	1881	William G. Brownson.
1814	Thomas Hubbard.	1882	Elisha B. Nye.
1822	Eli Todd.	1883	Benjamin N. Comings.
1824	Eli Ives.	1884	Elijah C. Kinney.
1827	John S. Peters.	1885	Samuel Hutchins.
1829	William Buel.	1886	Francis Bacon.
1832	Thomas Miner.	1887	George L. Porter.
1834	Silas Fuller.	1888	Orlando Brown.
1837	Elijah Middlebrook.	1889	Charles J. Fox.
1841	Luther Ticknor.	1890	Charles A. Lindsley.
1843	Archibald Welch.	1891	Cyrus B. Newton.
1846	Dyer T. Brainard.	1892	Francis D. Edgerton.
1847	George Sumner.	1893	Francis N. Braman.
1849	Rufus Blakeman.	1894	Seth Hill.
1851	Richard Warner.	1895	Rienzi Robinson.
1853	William H. Cogswell	1896	Ralph S. Goodwin.
1854	Benjamin H. Catlin.	1897	Henry P. Stearns.
1856	Ashbel Woodward.	1898	Charles S. Rodman.
1858	Josiah G. Beckwith.	1899	Leonard B. Almy.
1861	Ebenezer K. Hunt.	1900	John H. Grannis.
1863	Nathan B. Ives.	1901	Gould A. Shelton.
1865	Isaac G. Porter.	1902	Samuel B. St. John.
1866	Charles Woodward.	1903	William H. Carmalt.
1867	Samuel B. Beresford.	1904	Edward H. Welch.
1868	Henry Bronson.		{ Frederick A. Morrell.
1869	Charles F. Sumner.	1905	{ Eli P. Flint.
1870	Gurdon W. Russell.		{ Charles E. Brayton.
1871	Henry W. Buel.	1906	{ Franklin P. Clark.

1907	{ Miner C. Hazen.	1912	{ Frederick Gilnack.
	{ Irving L. Hamant.		{ Alvin E. Barber.
1908	{ Samuel D. Gilbert.	1913	{ William S. Hulbert.
	{ Walter L. Barber.		{ Kate C. Mead.
1909	{ Theodore R. Parker.	1914	{ Stephen J. Maher.
	{ William J. Tracey.		{ John B. Kent.
1910	{ Edmund P. Douglas.	1915	{ Charles B. Graves.
	{ Edward T. Bradstreet.		{ Cushman A. Sears.
1911	{ D. Chester Brown.	1916	{ George M. Burroughs.
	{ Ralph C. Paine.		{ John C. Kendall.

## SECRETARIES.

1792	Jared Potter.	1843	Ralph Farnsworth.
1794	James Clark.	1844	Worthington Hooker.
1796	Daniel Sheldon.	1846	Gurdon W. Russell.
1798	Nathaniel Perry.	1849	Josiah G. Beckwith.
1800	Samuel Woodward.	1858	Panet M. Hastings.
1801	William Shelton.	1862	Leonard J. Sanford.
1805	John Barker.	1864	Moses C. White.
1810	Eli Ives.	1876	Charles W. Chamberlain.
1813	Joseph Foot.	1883	Samuel B. St. John.
1817	Jonathan Knight.	1889	Nathaniel E. Wordin.
1827	Samuel B. Woodward.	1905	Walter R. Steiner.
1830	George Sumner.	1912	Wilder Tileston.
1832	Charles Hooker.	1913	Marvin McR. Scarbrough.
1838	Archibald Welch.		

## TREASURERS.

1792	John Osborn.	1834	Elijah Middlebrook.
1793	Jeremiah West.	1837	Luther Tichnor.
1794	John Osborn.	1841	Virgil Maro Dow.
1796	Mason F. Cogswell.	1851	George O. Sumner.
1800	William B. Hall.	1863	James C. Jackson.
1808	Timothy Hall.	1876	Francis D. Edgerton.
1813	Richard Ely.	1883	Erastus P. Swasey.
1816	Thomas Miner.	1889	William W. Knight.
1817	John S. Peters.	1905	Joseph H. Townsend.
1827	William Buel.	1916	Phineas H. Ingalls.
1829	Joseph Palmer.		

# ALPHABETICAL LIST

OF THE

## MEMBERS OF THE CONNECTICUT STATE MEDICAL SOCIETY,

*With Date and Place of Graduation, and Post-Office Address.*

In preparing this list the Secretary has followed the list in the Proceedings of 1892, made with great care and labor by Dr. J. B. Lewis for the Centennial year. It may be relied upon as being correct to November 1, 1916.

Aaronson, Michael S.	N. Y. Univ., '13	Ansonia.
Abrams, Alva Elnathan	Albany, '81	Hartford.
Adam, John Geikie	Trinity, Tor., '00	North Canaan.
Adams, Frederick Joseph	Univ. N. Y., '95	Bridgeport.
Adams, Henry Eli	Yale, '02	Hartford.
Adams, William Waldo	Bellevue, '91	Moosup.
Agnew, Robert Robertson	Yale, '08	Norwich.
Alcorn, Thomas Grant	P. & S., Boston, '97	Thompsonville.
Alcott, Ralph Waldo Emerson	U. S. Med. Coll., '81	West Hartford.
Allee, William Hanford	P. & S., N. Y., '99	Ridgefield.
Allen, Charles Noah	Univ. Vt., '81	Moosup.
Allen, Howard Oliver	Univ. N. Y., '79	Broad Brook.
Allen, Howard S.	Yale, '04	Woodbury.
Allen, Lauren Melville	P. & S., N. Y., '80	South Norwalk.
Allen, Millard Fillmore	Med. Chi., Phila., '95	New Haven.
Alling, Arthur Nathaniel, B.A., Yale, '86	P. & S., N. Y., '91	New Haven.
Allyn, Gurdon Spicer	Univ. Pa., '03	New London.
Allyn, Louis Maxson	Univ. Pa., '93	Mystic.
Alton, Charles De Lancey	Bellevue, '75	Hartford.
Anderson, Arvid	Univ. Mich., '93	New Britain.
Anderson, Henry Gray	P. & S., N. Y., '89	Waterbury.
Anderson, Peyton F.	N. Y. Homeo. Med. Col., '13	Waterbury.
Arnold, Ernest Hermann	Yale, '94	New Haven.
Arnold, Harold Sears, B.A., Yale, '00	Yale, '03	New Haven.
Atkinson, Edward	Univ. Vt., '93	Niantic.
Austin, Albert Elmer, A.B. & M.A., Amherst, Jeff., '05		Sound Beach.
Avery, John Waite	Univ. Vt., '97	Stamford.
Axtelle, John Franklin	L. I. Hosp. Coll., '71	Hartford.
Backus, Harold Simeon	L. I. Hosp. Coll., '03	Broad Brook.
Bacon, Leonard Woolsey, B.A., Yale, '88	Yale, '92	New Haven.
Bailey, John Elmore	P. & S., N. Y., '85	Middletown.
Bailey, Michael Angelo	P. & S., Balt., '93	Hartford.
Bailey, Neil H.	P. & S., Balt., '11	Hartford.

- Baker, Walter I. ....Hahnemann, Phila., '98....Naugatuck.  
 Baldwin, Charles Tomlinson.....Bell Med. Col., '83.....Derby.  
 Baldwin, William Pitt.....Yale, '90, N. Y. Homeo., '91, New Haven.  
 Banks, Daniel Tony.....Fordham, '12.....Bridgeport.  
 Barber, Alvin Elizur.....Berkshire, '54.....Bethel.  
 Barber, Walter Lewis.....Bellevue, '73.....Waterbury.  
 Barber, Walter Lewis, Jr., A.B., Yale, '03....N. Y. Univ. & Bellevue, '07, Waterbury.  
 Baribault, Arthur Octave.....Vict. Med. Coll., '89.....New Haven.  
 Barnes, Frank Hazelhurst.....N. Y. Homeo. Med., '96....Stamford.  
 Barnes, George.....Univ. N. Y., '04.....Killingly.  
 Barnes, Wm. Samuel, Ph.B., Yale, '95.....Yale, '97.....New Haven.  
 Barnett, John Frederick.....Yale, '69.....West Haven.  
 Barnum, Charles George, B.A., M.A. ....Middleburg Coll., Yale, '05....Groton.  
 Barrett, William Joseph.....Md. Med., '04.....New Haven.  
 Barrows, Benj. Safford, Ph.B., '83.....Univ. N. Y., '87.....Hartford.  
 Bartlett, Charles Joseph, B.A., Yale, '92;  
     M.A., Yale, '94.....Yale, '95.....New Haven.  
 Bartlett, William Bradford.....Harvard, '06.....Hartford.  
 Bassett, Clarence Wheeler.....Univ. N. Y., '82.....Sharon.  
 Beach, Charles Coffing, Ph.B., Yale, '77....P. & S., N. Y., '82.....Hartford.  
 Beach, Charles Thomas.....Yale, '05.....Hartford.  
 Bean, William Hill, Ph.B., Yale, '82.....Yale, '03.....New Haven.  
 Bean, Wright Butler.....P. & S., N. Y., '95.....Rockville.  
 Beaudry, Joseph Horace.....McGill, '13.....Bridgeport.  
 Beck, Frederick George.....Yale, '03.....New Haven.  
 Beckwith, Henry W. ....Dartmouth Med. Coll., '07..Seymour.  
 Bell, George Newton.....Yale, '92.....Hartford.  
 Belloso, Frederick.....Yale, '72.....New Haven.  
 Benedict, Frank Allen.....P. & S., N. Y., '87.....Seymour.  
 Benedict, John Mitchell.....Univ. N. Y., '82.....Waterbury.  
 Bergin, Thomas Joseph, B.A., Yale, '96.....Yale, '99.....Cos Cob.  
 Bergman, Alexander, B.S., Stockholm.....City of N. Y., '95.....New Haven.  
 Bernstein, Abraham.....Yale, '08.....Bridgeport.  
 Bevans, Theodore F. ....Univ. Minn., '03.....Waterbury.  
 Bickford, Henry.....Penn. Eclectic Med., '68....Hartford.  
 Bill, Philip Worcester, Ph.B., Yale '97.....P. & S., N. Y., '01.....Bridgeport.  
 Biram, James Harrington.....Cornell, '10.....Hartford.  
 Birdsong, Julian Lee, B.S., Nashville, '99....Johns Hopkins, '09.....Hartford.  
 Bishop, Frederic Courtney, B.A., Yale, '92....Yale, '95.....New Haven.  
 Bishop, Louis Bennett, B.A., Yale, '86.....Yale, '88.....New Haven.  
 Bissell, Jerome Samuel.....Yale, '94.....Torrington.  
 Bissell, William, B.A., Yale '53.....Yale, '56.....Lakeville.  
 Bissell, William Bascom, A.B., Yale, '88....P. & S., N. Y., '92.....Lakeville.  
 Black, John Eugene, Ph.B., Yale, '03.....Yale, '08.....Shelton.  
 Black, John T. ....Hahn. Med. Coll., '94....New London.  
 Black, Ross Elliot.....P. & S., N. Y., '05....New London.  
 Blackmar, John Stanley.....P. & S., N. Y., '98.....Norwich.  
 Blair, Edward Holden.....P. & S., Balt., '06.....Hartford.  
 Blake, Eugene Maurice.....Yale, '06.....New Haven.  
 Blank, Elmer Francis.....Starling, '97.....Bridgeport.  
 Blodget, Henry, A.B., Yale, '75.....Bellevue, '81.....Bridgeport.  
 Blumer, George, M.A., Yale, '07.....Cooper Med. Coll., '90....New Haven.  
 Boardman, Albertus Kellogg.....Univ. Penn., '99.....New Haven.  
 Bodley, George Houghton.....Yale, '07.....New Britain.  
 Bohannon, Charles Gordon.....Univ. N. Y., '78....South Norwalk.

- Bohannon, Richard Lee.....Univ. N. Y., '74.....Stamford.  
 Bonner, Robert Alexander.....Univ. of Md., '12.....Waterbury.  
 Borden, Charles Herbert.....P. & S., N. Y., '96.....Hartford.  
 Bostwick, Benjamin Earle.....L. I. Hosp. Coll., '90.....New Milford.  
 Botsford, Charles Porter.....Yale, '94.....Hartford.  
 Boucher, James Joseph.....P. & S., Balt., '04.....Hartford.  
 Boucher, John Bernard.....P. & S., Balt., '94.....Hartford.  
 Bowers, William Cutler.....P. & S., N. Y., '77.....Bridgeport.  
 Boyle, Robert J. ....Yale, '08.....Hartford.  
 Brackett, Arthur Stone, B.A., Yale '92.....Jefferson, '95.....Bristol.  
 Bradeen, Frederick Barton.....Univ. Pa., '99.....Essex.  
 Bradley, Mark Spaulding.....P. & S., N. Y., '92.....Hartford.  
 Bradstreet, Edward Thomas, B.A., Yale, '74.....P. & S., N. Y., '77.....Meriden.  
 Brainard, Clifford Brewster, Ph.B., Yale, '94.....Yale, '98.....Hartford.  
 Branon, A. William.....Jeff., '13.....Hartford.  
 Bray, Henry T. ....Univ. Vt., '02.....New Britain.  
 Brayton, Howard Wheaton, Ph.B., Brown, '06.....Harvard, '11.....Hartford.  
 Brennan, Patrick Joseph.....Yale, '07.....Waterbury.  
 Brewer, Edward Pliny.....Dartmouth, '79.....Norwich.  
 Bridge, John Law, B.S., Wesleyan, '88;  
     Ph.D., Clark, '94.....Harvard, '03.....Thompsonville.  
 Brodsky, Emanuel S. ....Univ. Zurich, Switzerland, '08, Westport.  
 Bronson, William Thaddeus.....Univ. N. Y., '08.....Danbury.  
 Brooks, Frank Terry, B.A., Yale, '90.....L. I. Hosp. Coll., '93.....Greenwich.  
 Brooks, Myre Joel.....Yale, '67.....New Canaan.  
 Brophy, Edward Joseph.....Yale, '04.....Norwich.  
 Brown, Charles Henry.....Univ. N. Y., '93.....Waterbury.  
 Brown, David Chester.....Yale, '84.....Danbury.  
 Brown, Harold Morris.....Jeff., '13.....Suffield.  
 Brown, Louis Raymond, A.B., Tufts.....Tufts, '07.....Middletown.  
 Browne, William Tyler, Ph.B., Yale, '78.....Harvard, '82.....Norwich.  
 Brownlee, Harris Fenton.....P. & S., N. Y., '88.....Danbury.  
 Bryon, Benn Adelmer.....Bellevue, '90.....Ridgefield.  
 Buel, John Laidlaw.....P. & S., N. Y., '88.....Litchfield.  
 Buffum, John Harold, Ph.B., Univ. Vt., '96.....Univ. Vt., '98.....Wallingford.  
 Bulkley, Lucius Duncan, A.B., Yale, '66; M.A., P. & S., N. Y., '69.....Norfolk.  
 Bull, John Norris.....P. & S., N. Y., '78.....Plainville.  
 Bull, Thomas Marcus.....P. & S., N. Y., '87.....Naugatuck.  
 Bull, William Tillinghast, Ph.B., Yale, '88.....P. & S., N. Y., '02.....New Haven.  
 Bullard, Marguerite Jane, A.B., Cornell, '02.....Cornell Univ., '04.....Putnam.  
 Bunce, Philip Dibble, A.B., Yale, '88.....P. & S., N. Y., '91.....Hartford.  
 Burke, William P. J. ....Yale, '90.....New Haven.  
 Burke, William.....L. I. Hosp. Coll., '96.....Greenwich.  
 Burnham, John Ladd, A.B., Yale, '96.....Yale, '97.....Middletown.  
 Burnell, Francis Edwin.....L. I. Hosp. Coll., '94.....South Norwalk.  
 Burr, Noah Arthur.....Yale, '01.....South Manchester.  
 Burroughs, George McClellan.....Balt. Med. Coll., '00.....Danielson.  
 Bush, Charles Ellsworth.....Yale, '94.....Cromwell.  
 Butler, Wilda Edwin.....Hahnemann, Phila., '97.....New Haven.  
 Butler, William James.....L. I. Hosp. Coll., '95.....New Haven.  
 Buttner, Jacques Louis.....Yale, '09.....New Haven.  
 Byrne, Daniel J. ....Yale, '09.....Waterbury.  
 Caldwell, William Ely.....Balt. Med. Coll., '95.....West Suffield.  
 Calef, Jeremiah Francis, B.A., Wesleyan, '77.....Yale, '80.....Middletown.

Callahan, John W. ....	P. & S., Balt., '11.....	Norwich.
Callender, Eugene F. ....	Yale, '12.....	Waterbury.
Camp, Charles Welford.....	Univ. N. Y., '74.....	Canaan.
Campbell, Arthur Joseph.....	P. & S., Balt., '85.....	Middletown.
Campbell, Hugh B. ....	Univ. of Penn., '09.....	Norwich.
Campbell, Sheldon Samuel Stratton.....	Univ. Vt., '02.....	Collinsville.
Cantarow, Daniel.....	Tufts, '11.....	Hartford.
Carelli, Genesis Frank.....	Yale, '11.....	New Haven.
Carlin, Charles Henry.....	Univ. Mich., '96.....	Torrington.
Carmalt, William Henry, M.A., Yale, '81.....	P. & S., N. Y., '61.....	New Haven.
Carroll, Charles H. ....	Yale, '12.....	New Haven.
Carroll, Isaiah F. ....	Balt. Med., '06.....	Stamford.
Carroll, John James.....	Dartmouth, '97.....	Naugatuck.
Carter, Earl B., Ph.B., Yale, '07.....	Johns Hopkins, '11.....	Hartford.
Carver, John Preston.....	Alhany, '96.....	Simshury.
Casey, William Bradford.....	Univ. Med., '06.....	Norwich.
Cassidy, Louis Thomas, Georgetown, '04.....	Georgetown, '08.....	Norwich.
Cassidy, Patrick.....	Univ. Vt., '65.....	Norwich.
Cassidy, Patrick John, B.A., Yale, '94.....	Johns Hopkins, '98.....	Norwich.
Castle, Frank Edwin.....	Yale, '70.....	Waterbury.
Chaffee, Jerome Stuart, Ph.B., Yale, '94.....	Univ. Pa., '97.....	Sharon.
Chapman, Alhert Taylor.....	P. & S., N. Y., '64.....	Old Mystic.
Chase, Arthur Alverdo.....	Harvard, '01.....	Plainfield.
Chedel, Charles Brigham, A.B., Dartmouth, '03.....	Dartmouth, '06.....	Portland.
Cheney, Benjamin Austin, B.A., Yale, '88....	Yale, '90.....	New Haven.
Cheney, George Philip.....	Md. Med. School, '13....	New London.
Chester, Thomas Weston, B.A., Rutgers, '92; M.A., '95.....	P. & S., N. Y., '95.....	Hartford.
Chipman, Edwin Clifford, A.B., Alfred Univ. '87. P. & S., N. Y., '91.....		New London.
Churchman, John Woolman, B.A., '98; M.A., Princeton, '01.....	Johns Hopkins, '02.....	New Haven.
Claffey, Michael Francis.....	Univ. of Vt., '14.....	Naugatuck.
Clark, Rohert Moses.....	Univ. Pa., '91.....	New Britain.
Clarke, Harold Metcalf.....	Univ. Toronto, '09.....	Bridgeport.
Clarke, John Alexander.....	Bellevue, '97.....	Greenwich.
Clarke, Ralph DeBallard, A.B., Univ. N. Y., '04.....	Johns Hopkins, '08.....	West Haven.
Clary, George, A.B., Dartmouth, '52.....	Yale, '57.....	New Britain.
Clifton, Harry Colman.....	Univ. Pa., '01.....	Hartford.
Cloonan, John Joseph.....	P. & S., Balt., '97.....	Stamford.
Cohh, Alhert Edward.....	Yale, '98.....	Hartford.
Cohurn, Jesse Milton.....	Boston Univ., '74.....	Norwalk.
Cochran, Levi Bennett.....	Univ. Pa., '93.....	Hartford.
Cogswell, Eliot S. ....	Harvard, '12.....	Hartford.
Cogswell, William Badger.....	Bellevue, '81.....	Stratford.
Cohane, Jeremiah Joseph.....	Yale, '98.....	New Haven.
Cohane, Timothy Francis.....	Yale, '97.....	New Haven.
Cohen, Joseph, A.B., Coll. City of N. Y., '94 ....	N. Y. Med. Coll., '09....	Bridgeport.
Coholan, Michael James.....	Univ. N. Y., '65.....	New Britain.
Coleburn, Arthur Burr.....	P. & S., N. Y., '90.....	Middletown.
Comfort, Chas. W., B.A., Yale, '11.....	Yale, '07.....	New Haven.
Comstock, Fred W. ....	Tufts Med., '13.....	New Haven.
Conkey, Caroline R. ....	Women's Med., '81.....	Waterbury.
Conklin, James Henry.....	Univ. Vt., '99.....	Hartford.
Conte, Harry A. ....	L. I. H. C., '12.....	New Haven.
Converse, George Frederick.....	Yale, '87.....	New Haven.

- Coogan, Joseph Albert.....Bellevue, '76.....Windsor Locks.  
 Cooney, William Joseph.....Yale, '12.....New Haven.  
 Cook, Ansel Granville.....P. & S., N. Y., '87.....Hartford.  
 Cooke, Joseph Anthony.....Yale, '97.....Meriden.  
 Cooley, Clifton Mather.....Yale, '08.....New Britain.  
 Cooley, Myron Lynus.....Buffalo Univ., '86.....Waterbury.  
 Cooper, Louis Edward, Ph.B., '84.....Yale, '86.....Ansonia.  
 Coops, Frank Harvey, B.A., Dalhousie, '88....P. & S., Balt., '96.....Bridgeport.  
 Costanzo, James J. ....Univ. of Ill. ....Stamford.  
 Costello, Henry N., B.A., Yale, '06.....Johns Hopkins, '10.....Hartford.  
 Cowan, Isabel.....Wom. Med. Coll., N. Y., '92, Waterbury.  
 Cowell, George B. ....P. & S., N. Y., '88.....Bridgeport.  
 Cox, Ralph Benjamin.....McGill, '02.....Collinsville.  
 Coyle, Anna E. ....Women's Med., '12.....Windsor Locks.  
 Coyle, William Joseph.....Buffalo Univ., '85.....Windsor Locks.  
 Craig, Charles Franklin.....Yale, '94.....Danbury.  
 Cram, George Eversleigh, Ph.B., Yale, '97....P. & S., N. Y., '01.....Norwalk.  
 Crane, Augustus Averill, B.A., Yale, '85.....Yale, '87.....Waterbury.  
 Crane, Ralph William.....Yale, '05.....Stamford.  
 Crary, David.....Yale, '69.....Hartford.  
 Cronin, William Daniel.....P. & S., N. Y., '00.....New London.  
 Crossfield, Frederick Solon.....Bellevue, '78.....Hartford.  
 Crowe, Willis Hanford.....P. & S., N. Y., '95.....New Haven.  
 Crowley, William H. ....Buffalo, '08.....Hartford.  
 Curley, William Henry.....Cornell, '08.....Bridgeport.  
 Curran, Philip John.....P. & S., N. Y., '01.....Bridgeport.  
 Curtis, Rollin Alanson.....Univ. N. Y., '93.....Stratford.
- D'Agostino, Francesco.....Naples Univ., Italy, '05..New Haven.  
 Daly, Charles W. ....P. & S., Balt., '10.....Hartford.  
 Danielson, Edwin L. ....P. & S., N. Y., '82.....Lebanon.  
 Dart, Frederick Howard.....P. & S., N. Y., '84.....Niantic.  
 Davis, Charles Clarence.....Yale, '07.....Essex.  
 Davis, Elias Wyman, B.A., Yale, '80.....Yale, '92.....Seymour.  
 Day, Fessenden Lorenzo, B.A., Bates, '90....Bellevue, '93.....Bridgeport.  
 Deane, Henry Augustus.....Dartmouth, '68.....South Windsor.  
 DeBonis, Domenico.....Naples, '90.....Hartford.  
 DeForest, Louis Shepard, B.A., Yale, '79;  
   M.A., Yale, '91.....Univ. Jena, '85.....New Haven.  
 Delaney, William Joseph.....McGill Univ., '87.....Naugatuck.  
 DeLuise, Isacco.....Naples Univ., '03.....Waterbury.  
 Deming, Alletta Langdon Bedford, A.B., Cornell.Cornell, '05.....Waterbury.  
 Deming, Clinton D., B.A., Yale, '07.....Johns Hopkins, '10.....Hartford.  
 Deming, Edward A., Ph.B., Yale, '04.....Johns Hopkins, '08.....Hartford.  
 Denne, Thomas Harman.....Vermont, '05.....Bloomfield.  
 Dennis, Frederick Shepard, B.A., Yale, '72;  
   M.R.C.S. ....Bellevue, '74.....Norfolk.  
 Devitt, Ellis King.....Univ. Med. Coll., '07.....Lyme.  
 DeWolfe, Daniel Charles.....Univ. Vt., '86.....Bridgeport.  
 Dichter, Charles Levi.....Md. Med. Coll., '05.....Stamford.  
 Dickerman, Wilton Elias, B.A., Amherst, '90..Yale, '93.....Hartford.  
 Dickinson, Francis McLean, Ph.B., Yale, '00....P. & S., N. Y., '05.....Rockville.  
 Diefendorf, Allen Ross, B.A., Yale '94.....Yale, '96.....New Haven.  
 Dinnan, James B. ....Yale, '04.....Meriden.  
 Dole, Mary Phylinda, B.S., Mt. Holyoke, '89..Wom. Med. Coll., '88....New Haven.  
 Donahue, James Joseph.....P. & S., Balt., '96.....Norwich.

- Donahue, John Daniel .....Balt. Med. '09.....Norwich.  
 Donahue, John James.....Balt. Med., '09.....Norwich.  
 Donahue, Michael Joseph.....Univ. Pa., '86.....Waterbury.  
 Donaldson, William Henry.....Univ. N. Y., '81.....Fairfield.  
 Douglass, Edmund Peaslee.....Univ. N. Y., '89.....Groton.  
 Dowd, Michael Joseph.....Balt. Med. Coll., '01.....Thompsonville.  
 Dowling, John Francis.....L. I. Hosp. Coll., '90.....Hartford.  
 Down, Edwin Augustus.....P. & S., N. Y., '87.....Hartford.  
 Downing, Francis.....Balt. Med. Coll., '08.....Moosup.  
 Driscoll, William T. ....P. & S., Balt., '12.....Norwich.  
 Dryfus, Milton L. ....Yale, '12.....New Haven.  
 Duesing, Hermann.....Univ. of Wurtzburg, '92.....Bridgeport.  
 Dumortier, Jean.....Univ. Ghent, Belg., '89, South Norwalk.  
 Dunham, Martin Van Buren.....Harvard, '67.....Greenfield Hill.  
 Dunn, Frank Martin.....Balt. Med. Coll., '08.....New London.  
 Dunn, George Washington.....Balt. Med. Coll., '09.....New Britain.  
 Dupee, Edward Wilson.....Univ. of Md., '00.....Bridgeport.  
 Dwyer, Patrick James, A.B., Fordham, '94.....Univ. N. Y., '97.....Waterbury.  
 Dwyer, Richard Joseph.....Jeff., '08.....Hartford.  
 Dwyer, William.....Johns Hopkins, '13.....Hartford.
- Eddy, George William.....Vermont, '04.....Collinsville.  
 Egan, John Joseph.....Univ. of Md., '12.....Waterbury.  
 Egbert, Jay Hobart, A.B., A.M., Univ. Chicago..P. & S., N. Y., '97.....Willimantic.  
 Eggleston, Jeremiah Dewey.....P. & S., N. Y., '79.....Meriden.  
 Elcock, Harry A. ....Yale, '11.....New Britain.  
 Eliot, Gustavus, B.A., Yale, '77; A.M., '82...P. & S., N. Y., '80.....New Haven.  
 Elliott, Calvin H. ....Med. Chi., '05, M.Sc. Buckland, '04, Hartford.  
 Ellis, Thomas Long, B.A., Yale, '94.....Yale, '96.....Bridgeport.  
 Elmer, Edward Oliver.....P. & S., Balt., '94.....Hartford.  
 Emmett, F. Arthur.....Yale, '02.....Hartford.  
 Enders, Thomas Burnham, A.B., Yale, '88...P. & S., N. Y., '91.....Hartford.  
 Engelke, Charles.....P. & S., N. Y., '02.....Waterbury.  
 English, Charles Verrin.....St. Louis, '12.....Hartford.  
 English, Richard Matthew.....Yale, '98.....Danbury.  
 Esposito, Joseph V. ....Jeff., '12.....New Haven.
- Farrell, John Edward.....Univ. N. Y., '03.....Waterbury.  
 Fauver, Edgar.....P. & S., Columbia, '09...Middletown.  
 Felty, John Wellington, A.M., Emporia,  
 Kan., '97.....Jeff., '84.....Hartford.  
 Fenn, Ava Hamlin.....P. & S., Balt., '86.....Meriden.  
 Ferguson, Robert J. ....Hahn, Phila., '89.....New Haven.  
 Ferrin, Carlisle Franklin, B.A., Univ. Vt., '91..P. & S., N. Y., '95.....New London.  
 Ferris, Harry Burr, B.A., Yale, '87.....Yale, '90.....New Haven.  
 Field, Albert.....L. I. Hosp. Coll., '67...East Hampton.  
 Finch, George Terwilliger, B.A., Hobart, '75,  
 M.A., Hobart, '78.....Bellevue, '77.....Thompsonville.  
 Finch, Sarah Elizabeth.....Cornell, '04.....Sound Beach.  
 Finnegan, John Hamill.....Maryland Med. Coll., '12...Bridgeport.  
 Finklestone, Benjamin Brooks.....P. & S., Balt., '10.....Bridgeport.  
 Fischer, Abraham.....N. Y. Univ. & Bell. Hosp., '09, Hartford.  
 Fischer, William John Henry.....Yale, '11.....Milford.  
 Fisher, Jessie Weston.....Wom. Med. Coll., Pa., '93, Middletown.  
 Fisher, William Edwin.....Univ. Pa., '76.....Middletown.

Fiske, Isaac Parsons.....	Univ. N. Y., '75.....	Coventry.
Fitch, Frederick Tracy.....	Yale, '04.....	East Hampton.
Fitzgerald, Charles.....	Univ. Vt., '98.....	New Haven.
Fitzgerald, Edward.....	P. & S., Balt., '84.....	Bridgeport.
Fitzgerald, William Henry.....	Univ. Vt., '95.....	Hartford.
Flaherty, Claude V. ....	Yale, '10.....	Hartford.
Fleck, Harry Willard.....	Jeff., '96.....	Bridgeport.
Fleischner, Henry.....	Yale, '78.....	New Haven.
Flint, Eli Percival.....	Yale, '79.....	Rockville.
Flint, Joseph Marshall, B.S., Univ. of Chicago,		
'95; Princeton, '00; M.A., Yale, '07.....	Johns Hopkins, '00.....	New Haven.
Flynn, Charles T. ....	Yale, '11.....	New Haven.
Flynn, James Henry Joseph.....	Yale, '95.....	New Haven.
Flynn, John Francis.....	P. & S., Balt., '12.....	Bridgeport.
Fontaine, Alphonse.....	Laval Univ., '92.....	Moosup.
Foote, Charles Jenkins, B.A., Yale, '83.....	Harvard, '87.....	New Haven.
Ford, Alice Porter.....	Wom. Med. Coll., Pa., '04, New Haven.	
Ford, George Skiff.....	Bellevue, '93.....	Bridgeport.
Formichelli, Giovanni.....	Univ. Italy, '98.....	Bridgeport.
Foster, Dean, M.A., Univ. Kan. ....	Yale, '99.....	Stamford.
Foster, Warren Woden.....	Harvard, '82.....	Putnam.
Fox, David Austin.....	Univ. & Belle, '02.....	Clinton.
Fox, Edward Gager.....	Univ. N. Y., '83.....	Wethersfield.
Fox, Morton Earl.....	L. I. Hosp. Coll., '03.....	Uncasville.
Fox, Peter William.....	Univ. Vt., '01.....	New Britain.
Frank, Philip.....	Yale, '07.....	Waterbury.
Freeman, Albert C. ....	Univ. of Vt., '13.....	Norwich.
French, Howard Truman.....	P. & S., N. Y., '91.....	Deep River.
Freney, John Daniel.....	L. I. Hosp. Coll., '93.....	Waterbury.
Fromen, Ernst Theodore.....	Milwaukee Med. Coll., '97, New Britain.	
Frost, Charles Warren Selah.....	P. & S., N. Y., '80.....	Waterbury.
Fruin, John William.....	L. I. Hosp. Coll., '08.....	Waterbury.
Gade, Carl Johannes.....	Yale, '10.....	Bridgeport.
Gailey, John Joseph.....	Bowdoin, '98.....	Waterbury.
Gallivan, Thomas H. ....	Yale, '09.....	Hartford.
Gancher, Jacob.....	L. I. Coll. Hosp., '06.....	Waterbury.
Gandy, Raymond R. ....	Univ. Penn., '99.....	Stamford.
Ganey, Joseph Matthew.....	P. & S., N. Y., '04.....	New London.
Gardner, Charles Wesley.....	Univ. Md., '01.....	Bridgeport.
Gardner, James Lester.....	Univ. Vt., '81.....	Central Village.
Garlick, George B. ....	Yale, '12.....	Bridgeport.
Garlick, Samuel Middleton, B.A., Dart. '74....	Harvard, '77.....	Bridgeport.
Gaucher, Josaphat.....	Balt. Med., '12.....	Willimantic.
Gaylord, Charles Woodward, B.A., Yale, '70....	Yale, '72.....	Branford.
Gessner, Francis E. ....	Yale, '12.....	New Haven.
Gibbs, Joseph Addison.....	P. & S., Chicago, '02.....	Suffield.
Gilday, James Lowrey.....	Med. Coll. of Cin., '13.....	Bridgeport.
Gildersleeve, Charles Childs.....	Yale, '96.....	Norwich.
Gill, Michael Henry.....	Yale, '96.....	Hartford.
Gillam, William S. ....	Univ. Pa., '88.....	South Manchester.
Gillin, Charles A. ....	Univ. N. Y., '83.....	New Britain.
Gilmore, Joseph L. ....	Yale, '04.....	West Haven.
Gilnack, Frederick.....	P. & S., N. Y., '67.....	Rockville.
Girard, Charles Hermenigilde.....	Victoria, '96.....	Willimantic.

- Girouard, Joseph Arthur.....Balt. Med. Coll., '99.....Willimantic.  
 Gladwin, Ellen Hammond.....Wom. Med. Coll., N. Y., '72, Hartford.  
 Godfrey, Charles Cartlidge.....Dartmouth, '83.....Bridgeport.  
 Godfrey, William Truitt.....Cornell, '07.....Stamford.  
 Gold, James Douglass, Ph.B., Yale, '88.....P. & S., N. Y., '91.....Bridgeport.  
 Goldherg, Samuel James.....Yale, '07.....New Haven.  
 Goldman, George.....Yale, '10.....New Haven.  
 Gompertz, Louis Michael.....Yale, '96.....New Haven.  
 Good, William M. ....Yale, '09.....Waterbury.  
 Goodenough, Edward Winchester, B.A.,  
     Yale, '87.....Yale, '93.....Waterbury.  
 Goodrich, Charles Augustus, B.S., Mass. Agr.  
     Coll., '93.....P. & S., N. Y., '96.....Hartford.  
 Goodrich, William Albert.....Med. Chi., Phila., '02.....Waterbury.  
 Goodwin, Ralph Schuyler, Ph.B., Yale, '90.....P. & S., N. Y., '93.....Thomaston.  
 Goodyear, Robert Beardsley.....Yale, '68.....North Haven.  
 Gordon, William Francis.....L. I. Hosp. Coll., '96.....Danbury.  
 Gorham, Frank.....Yale, '76.....Lyons Plains.  
 Grannis, Irwin.....Yale, '96.....Old Saybrook.  
 Graves, Charles Burr, B.A., Yale, '82.....Harvard, '86.....New London.  
 Graves, Frederick George.....Yale, '92.....Waterbury.  
 Gray, William Henry.....P. & S., N. Y., '89.....Mystic.  
 Gray, William Wetmore, B.S., Dickinson, '85.....Bellevue, '90.....Bridgeport.  
 Green, Jacques H. ....N. Y. Univ. & Bellevue Med. Coll., '13.....Waterbury.  
 Greenstein, Morris Jacob.....Univ. South, '06.....Bridgeport.  
 Gregory, James Glynn, B.A., Yale, '65.....P. & S., N. Y., '68.....Norwalk.  
 Gregory, Ward Slosson, Ph.B., Yale, '99.....P. & S., N. Y., '03.....Norwalk.  
 Griffen, Daniel Patrick.....Jeff., '14.....Bridgeport.  
 Griggs, John Bagg.....Yale, '97.....Hartford.  
 Griswold, Arthur Heywood, A.B., Harvard, '02.....Johns Hopkins, '06.....Hartford.  
 Griswold, Frederick Pratt.....P. & S., N. Y., '76.....Meriden.  
 Griswold, Julius Egbert.....Univ. N. Y., '79.....Rocky Hill.  
 Griswold, Matthew H. ....Univ. Vt., '13.....Kensington.  
 Griswold, Roger M. ....Univ. N. Y., '75.....Kensington.  
 Griswold, William Loomis, Ph.B., Yale, '81.....P. & S., N. Y., '85.....Greenwich.  
 Guild, Frank Eugene.....L. I. Hosp. Coll., '85.....Windham.  
 Hackett, John Francis, B.A., Yale.....McGill, '06.....Mansfield Depot.  
 Hale, Fraray, B.S., Amherst, '05.....P. & S., N. Y., '09.....Bridgeport.  
 Hall, Edward Dormenio.....Harvard, '73.....Meriden.  
 Hall, Joseph Barnard.....Yale, '92.....Hartford.  
 Hallock, Frank Kirkwood, A.B., Wesleyan, '82;  
     A.M., '85.....P. & S., N. Y., '85.....Cromwell.  
 Hamant, Irving Louis.....L. I. Hosp. Coll., '90.....Norfolk.  
 Hamilton, Charles Allen.....Univ. Vt., '86.....Waterbury.  
 Hammond, Samuel Mowbray.....Yale, '96.....New Haven.  
 Hanchett, Harry Bigelow.....Jeff., '05.....Torrington.  
 Hanley, John Patrick.....Cornell, '06.....Stafford Springs.  
 Harrington, Amos Thomas, A.B., Yale, '97.....Harvard, '10.....Hartford.  
 Harrington, James Leon.....Jeff., '03.....New London.  
 Harrington, Robert E. ....Balt. Med. Coll., '06 North Stonington.  
 Harrison, John Francis.....Jeff., '03.....Stamford.  
 Hart, Benjamin I., B.A., N. Y. Univ., '00.....P. & S., N. Y., '04.....Bridgeport.  
 Harten, James A. ....Balt. Med., '10.....New Haven.  
 Hartnett, Joseph Daniel.....Balt. Med., '11.....Winsted.

Hartshorn, Willis Ellis, Ph.B., Colo. Coll., '95..	Univ. Minn., '98...	New Haven.
Harvey, Edward R. ....	Balt. Med., '02.....	Seymour.
Haskell, Charles Nahum.....	Univ. Vt., '90.....	Bridgeport.
Hatheway, Clarence Morris.....	Bellevue, '03.....	Hartford.
Haviland, C. Floyd.....	Syracuse Univ., '96.....	Middletown.
Hawkes, William Whitney, B.A., Yale, '79....	Yale, '81.....	New Haven.
Hawley, George Walter.....	Cornell, '99.....	Bridgeport.
Hayes, John Francis.....	Univ. N. Y., '79.....	Waterbury.
Haylett, Howard Bulkley.....	Vermont, '07.....	Hartford.
Hazen, Robert, A.B., Univ. Vt., '96.....	Univ. Vt., '98.....	Thomaston.
Heady, Carlton K. ....	Jeff., '13.....	Milford.
Healey, Thomas F. ....	L. I. Med. Coll., '08.....	Waterbury.
Healey, Thomas Francis .....	Niagara, '93.....	Bridgeport.
Henderson, Alfred Collard, B.S., Amherst, '99..	P. & S., N. Y., '03.....	Stamford.
Hendricks, Albert L. ....	Yale, '07.....	New Haven.
Henkle, Emmanuel Alexander.....	Cornell, '99.....	New London.
Henze, Carl William.....	Yale, '00.....	New Haven.
Heburn, Thomas Norval, A.B., Randolph		
Macon Coll., Va., A.B., '00; A.M., '01....	Johns Hopkins, '05.....	Hartford.
Herbert, Archibald Cecil.....	Univ. Va., '03.....	New Haven.
Herr, Edward A., Dartmouth, '06.....	Vermont, '09.....	Waterbury.
Hershman, Abram Aron.....	Yale, '08.....	New Haven.
Hertzberg, George Robert.....	Dartmouth, '99.....	Stamford.
Hessler, Herman Philip.....	Yale, '03.....	New Haven.
Heublein, Arthur Carl.....	P. & S., N. Y., '02.....	Hartford.
Hewes, Frank William.....	Univ. Vt., '94.....	Groton.
Heyer, Harold Hankinson.....	Univ. N. Y., '87.....	New London.
Higgins, Gould Shelton.....	Yale, '01.....	North Haven.
Higgins, Harry Eugene.....	Univ. N. Y., '96.....	Norwich.
Higgins, William Lincoln.....	Univ. N. Y., '90.....	South Coventry.
Hill, Charles Edwin, B.A., Yale, '76.....	Harvard, '79.....	East Killingly.
Hill, William Martin.....	Univ. Va., '97.....	Noank.
Hills, Laura Heath.....	Wom. Med. Coll., '96....	Willimantic.
Hine, Henry Kingsley.....	Md. Med. Coll., '08.....	Waterbury.
Hippolitus, Paul Difrancesca.....	Yale, '12.....	Bridgeport.
Hirata, Isao.....	Yale, '12.....	New Haven.
Hitchcock, Walter, Ph.B., Yale, '80.....	P. & S., N. Y., '83.....	Norwalk.
Hodgson, Thomas Cady, M.B., Toronto, '94....	Trinity Medical Coll., '94,	East Berlin.
Hogan, William John.....	Yale, '98.....	Torrington.
Holbrook, Charles Werden, M.A., Amherst, '93..	Yale, '96.....	East Haven.
Holmes, LeVerne.....	Boston Univ. Homeo. Sc. of Med., '04,	So. Manchester.
Horn, Martin Isadore, Med. Coll. N. Y., '12, N. Y. Homeo. Med. Coll., '13	Bridgeport.	
Horton, William Wickham.....	Univ. N. Y., '79.....	Bristol.
Houghton, Simon Willard.....	Bellevue, '79.....	Hazardville.
House, Albert Lewis.....	Yale, '95.....	Noroton.
Hovey, Leroy A. ....	Univ. of Vt., '10.....	Southington.
Howard, Arthur Wayland.....	Univ. N. Y., '90.....	Wethersfield.
Howard, John.....	Dartmouth, '81.....	Hartford.
Howd, Salmon Jennings.....	Jeff., '83.....	Winsted.
Howe, Herbert H. ....	Univ. Vt., '80.....	Yantic.
Howland, DeRuyter.....	P. & S., N. Y., '06.....	Stratford.
Howland, Edward Joseph.....	Vt. Med., '11.....	Colchester.
Hoyt, Harold Eliphalet, A.B., Univ. Kansas, Albany, '94..		Noroton.
Hulbert, William Sharon.....	Univ. N. Y., '80.....	Winsted.

Hungerford, Henry Edward.....Yale, '98.....Waterbury.  
 Huntington, Samuel Henry.....Yale, '76.....Norwalk.  
 Hurd, Alonzo L., B.S., Me., '82.....Univ. Vt., '91.....Somers.  
 Hurlhut, Augustin Moen, B.A., Yale, '76.....P. & S., N. Y., '79.....Stamford.  
 Hyde, Charles Elias.....Yale, '10.....Southport.  
 Hyde, Fritz Carleton.....Univ. Mich., '00.....Greenwich.  
 Hyde, Harriet Baker.....Univ. Mich., '00.....Greenwich.  
 Hynes, Frederick H. ....Yale, '00.....New Haven.  
 Hynes, Thomas Vincent.....Tufts Med., '13.....New Haven.

Ingalls, Phineas Henry, A.B., Bowdoin, '77

A.M., '85.....P. & S., N. Y., '80.....Hartford.  
 Irving, Samuel Wellington.....Yale, '91.....New Britain.  
 Irwin, Vincent J., Jr. ....Yale, '10.....Granby.  
 Ives, Eli Butler.....Yale, '03.....Bridgeport.  
 Ives, John Wagner.....Yale, '00.....Milford.

Jackowitz, Gabriel, Boston Univ. Med. Coll., '07.....New Haven.  
 James, George R. ....Yale, '10.....New Haven.  
 Jarvis, Henry Gildersleeve, A. B., Yale, '06.....Johns Hopkins, '10.....Hartford.  
 Jenkins, Charles Albert.....Balt. Med. Coll., '11.....Willimantic.  
 Jennings, George Herman.....L. I. Hosp. Coll., '75.....Jewett City.  
 Jones, Charles Emerson, Jr. ....Bellevue, '09.....Hartford.  
 Johnson, Edwin Hines.....Univ. Vt., '88.....Naugatuck.  
 Johnson, John Murray.....L. I. Hosp. Coll., '05.....Bridgeport.  
 Joslin, George Harvey.....Univ. Vt., '87.....Mt. Carmel.  
 Judson, William Henry.....Jeff., '78.....Danielson.

Kane, James Hugh.....Md. Med. Coll., '04.....Thomaston.  
 Kane, Thomas Francis.....Bellevue, '87.....Hartford.  
 Karrman, Edward William.....N. Y. Univ., '84.....Cheshire.  
 Keane, Robert Barnahas.....Bellevue, '03.....Bridgeport.  
 Keating, Hugh Francis.....Yale, '08.....New Haven.  
 Keating, Wm. Patrick Stuart.....Jeff., '99.....Willimantic.  
 Keeler, Charles B. ....Hahn, Chicago, '88.....New Canaan.  
 Keith, Albert Russell, A.B., Colby, '97.....Harvard, '03.....Hartford.  
 Kelsey, Ernest Russell.....Univ. Md., '01.....Winsted.  
 Kellogg, Kenneth Evernghim.....P. & S., N. Y., '98.....New Britain.  
 Kendall, John Calvin, B.A., Yale, '70.....P. & S., N. Y., '75.....Norfolk.  
 Keniston, James Mortimer.....Harvard, '71.....Middletown.  
 Kenna, William Matthew, Ph.B., Yale, '90.....Yale, '92.....Middletown.  
 Kennedy, Philip Thomas, B.A., Trinity, '05.....Harvard, '09.....Hartford.  
 Kent, John Bryden.....Harvard, '60.....Putnam.  
 Kiernan, Walter H., A.B., Trinity.....McGill, '98.....Sandy Hook.  
 Kilhourn, Clarence Leishman.....Yale, '97.....New Haven.  
 Kilhourn, Joseph Austin.....P. & S., Balt., '97.....Hartford.  
 Kilmartin, Thomas J. ....Univ. N. Y., '95.....Waterbury.  
 King, Howard Frost.....Alhany, '99.....Windsor.  
 Kingsman, James Henry, A.B., Yale, '82.....P. & S., N. Y., '85.....Middletown.  
 Kingshury, Isaac William, A.B., Harvard, '96.....P. & S., N. Y., '03.....Hartford.  
 Kingshury, William Sanford.....Yale, '96.....Glastonbury.  
 Kinsella, Gertrude J. ....Tufts, '12.....New Britain.  
 Kinsella, Michael A. ....Tufts, '12.....New Britain.  
 Kirhy, Frank Alonzo.....Columbian Univ. Wash., D. C., '95.....New Haven.

Kirschbaum, Edw. H.	Yale, '12	Waterbury.
Klein, Alvin Walter	Cin. Coll. Med. & Surg., '89	Greenwich.
Kleiner, Israel	Yale, '08	New Haven.
Knight, William Ward	Univ. N. Y., '76	Hartford.
Knowlton, Don Jerome, A.B., Harvard	Harvard, '12	Greenwich.
Kowalewski, Victor Alexander, B.A., Yale, '99	Yale, '02	West Haven.
Krasynce, John Francis, Carnegie Univ., B.A.	Valparaiso Univ., '11	Bridgeport.
La Field, Arthur Wm.	N. Y. Homeo., '05	Bridgeport.
Lally, Thomas John	Albany, '99	Waterbury.
Lambert, Adelaide	Boston Univ. Med. Coll., '84	New Haven.
Lambert, Henry Bertram	Jeff., '09	Bridgeport.
Lampson, Edward Rutledge, A.B., Trinity, '91	P. & S., N. Y., '96	Hartford.
Landry, Arthur B.	Jeff., '09	Hartford.
Lane, Frederick Pollock	Yale, '04	New Haven.
Lane, John E., B.A., Yale, '94, M.A., '97	Yale, '03	New Haven.
Lang, William P.	Hahnemann, Phila., '01	New Haven.
LaMoure, Charles TenEyck	Albany, '94	Lakeville.
LaPierre, Armand J.	Univ. Vt., '10	Norwich.
LaPierre, Leone Franklin	Yale, '01	Norwich.
La Pointe, John William Henry	Laval Univ., Montreal, '92	Meriden.
LaRue, Omar	Vict., Montreal, '71	Putnam.
Lawlor, Michael Joseph, Holy Cross, '02	P. & S., N. Y., '06	Waterbury.
Lawson, George Newton, B.A., Yale, '90	Yale, '92	Middle Haddam.
Lawson, Stuart Johnston	Univ. Md., '05	New London.
Lawton, Franklin Lyman, Ph.B., Yale, '90	Yale, '93	Hartford.
Lawton, Richard J.	Md. Med., '08	Terryville.
Lay, Walter Sidders	Yale, '01	Hamden.
Lear, Maxwell	Yale, '11	New Haven.
Lee, Frank Herbert	Albany, '88	Canaan.
Lec, Harry Moore	Columbia, '98	New London.
Lemmer, George Edward	Bellevue, '85	Danbury.
Levery, Charles Joseph	N. Y. Univ. & Bell., '01	Bridgeport.
Levy, Louis H.	Yale, '11	New Haven.
Levy, William	Yale, '11	West Suffield.
Lewis, Dwight Milton, B.A., Yale, '97	Johns Hopkins, '01	New Haven.
Lewis, George Francis, B.A., '64	Yale, '65	Collinsville.
Lewis, George Frederick, B.A., Trinity, '77	Yale, '84	Stratford.
Licht, William H.	Johns Hopkins, '11	Waterbury.
Linde, Joseph Irving	Yale, '08	New Haven.
Lindsley, Charles Purdy, Ph.B., Yale, '75	Yale, '78	New Haven.
Locke, Harry L. F.	Tufts, '12	Hartford.
Lockhart, Reuben Arthur	Yale, '91	Bridgeport.
Lockwood, Howard DeForest	Yale, '01	Meriden.
Loewe, Leonard J., M.D.V., Harvard, '08	Tufts, '01	Haddam.
Loomis, Frank Newton, B.A., Yale '81	Yale, '83	Derby.
Lord, Sidney Archer	Harvard, '94	Middletown.
Loveland, Ernest Kilburn	Yale, '97	Watertown.
Loveland, John Elijah, B.A., Wesleyan, '89	Harvard, '92	Middletown.
Lowe, Russell Walter	Univ. N. Y., '89	Ridgefield.
Luby, John Francis, Ph.B., Yale, '76	P. & S., N. Y., '78	New Haven.
Ludington, Nelson Amos	Yale, '01	New Haven.
Luther, Calista Vinton	Wom. Med. Coll., Pa., '85	Old Saybrook.
Lyman, David Russell	Univ. Va., '99	Wallingford.
Lyman, Emmett Judson	Yale, '07	Westbrook.

Lynch, Edward James.....	Univ. Pa., '09.....	Norwich.
Lynch, John Charles.....	Univ. N. Y., '86.....	Bridgeport.
Lynch, James F. ....	P. & S., Balt., '13.....	Hartford.
Lynch, Robert Joseph.....	Bellevue, '97.....	Bridgeport.
Lyon, Edwin Bradbury.....	Berkshire, '62.....	Hartford.
Lyon, Trehy Williams.....	Yale, '03.....	New Haven.
MacDonald, John Joseph.....	Yale, '07.....	Bridgeport.
MacLean, Donald Robert.....	Balt. Med. Coll., '01.....	Stamford.
Madden, Leon Irving, A.B., Clark.....	Harvard, '10.....	Hartford.
Magill, Aubrey L. ....	McGill Univ., '08.....	New Haven.
Maguire, Edward O'Reilly.....	P. & S., N. Y., '98.....	Derhy.
Maher, James Stephen, Ph.B., Yale, '92.....	Yale, '96.....	New Haven.
Maher, Stephen John.....	Yale, '87.....	New Haven.
Mailhouse, Max, Ph.B., Yale, '76.....	Yale, '78.....	New Haven.
Maine, Thurman Park.....	Med. Chi., '12.....	Norwich.
Maloney, Daniel Joseph.....	Univ. N. Y., '96.....	Waterbury.
Maloney, Maurice Washington.....	Jeff. Med. Coll., Phil., '97, New Britain.	
Marcy, Robert A. ....	N. Y. Univ. Med. Coll., '82, Litchfield.	
Mariani, Nicola.....	Univ. Naples, '93.....	New Haven.
Marsh, Arthur D. ....	Yale, '08.....	Hampton.
Marsh, Arthur Washburn.....	Univ. Vt., '82.....	New Haven.
Martelle, Henry Augustus, A. B., Bowdoin, '01.....	Johns Hopkins, '05.....	Hartford.
Martin, James S. ....	Yale, '05.....	Watertown.
Mason, Louis Irving.....	P. & S., N. Y., '91.....	Willimantic.
May, George William.....	Milwaukee Med. Coll., '95, So. Manchester.	
May, Jacob Rush.....	Chicago, '76.....	Bridgeport.
Mayberry, Franklin Hayden.....	Univ. Vt., '85.....	East Hartford.
McCabe, Edward Michael, B.A., Manhattan, '83.....	Yale, '87.....	New Haven.
McCarthy, Daniel Joseph.....	P. & S., Balt., '06.....	Bridgeport.
McClellan, William Ernest.....	Toronto, '04.....	Hartford.
McCook, John Butler, B.S., Trinity, '90.....	P. & S., N. Y., '94.....	Hartford.
McDermott, Terrance Stephen.....	Yale, '98.....	New Haven.
McDonald, Arthur Francis.....	P. & S., N. Y., '05.....	Waterbury.
McDonnell, Ralph Augustine, B.A., Yale, '90.....	Yale, '92.....	New Haven.
McFarland, David Walter.....	Univ. N. Y., '85.....	Greens Farms.
McGaughey, James David.....	Jeff., '10.....	Wallingford.
McGovern, Edward Francis.....	Univ. Balt., '01.....	Bridgeport.
McGrath, John H. ....	Yale, '08.....	Waterbury.
McGuire, Frank J. ....	Yale, '97.....	New Haven.
McGuire, William C. ....	Yale, '09.....	New Haven.
McIntosh, Edward Francis.....	Yale, '97.....	New Haven.
McKee, Frederick Lyman.....	P. & S., N. Y., '99.....	Hartford.
McKendree, Charles A., A.B., Dartmouth, '07.....	Dartmouth, '10.....	Cromwell.
McKnight, Everett James, B.A., Yale, '76; M.A., '77.....	P. & S., N. Y., '79.....	Hartford.
McLarney, Thomas Joseph.....	P. & S., Balt., '97.....	Waterbury.
McLaughlin, John Henry.....	P. & S., Balt., '09.....	Jewett City.
McLaury, Frank Harold.....	P. & S., N. Y., '95.....	Westport.
McLinden, James John.....	Univ. Pa., '98.....	Waterbury.
McNeil, Rollin.....	Yale, '62.....	New York State.
McPartland, Patrick Farrell.....	Balt. Med. Coll., '05.....	Hartford.
McPherson, Sidney Horace.....	Tufts, '13.....	Hartford.
McQueen, Arthur Samuel.....	Yale, '01.....	Branford.
McQueeney, Andrew.....	Yale, '05.....	Bridgeport.

McSweeney, Jeremiah Everett.....	Vermont, '91.....	Hartford.
Mead, Kate Campbell.....	Wom. Med. Coll., Pa., '88, Middletown.	
Meade, Charles Havelock Beverly.....	Univ. of Louisville, '02.....	Stamford.
Meagher, William F. ....	Univ. Vt., '99.....	Hartford.
Meek, James A. ....	McGill Univ., '75.....	So. Norwalk.
Meeks, Harold Albert.....	Bellevue, '90.....	Meriden.
Mendillo, Anthony Joseph.....	Yale, '07.....	New Haven.
Mercer, Clarence H. ....	Md. Med. Coll., '05.....	Ansonia.
Miles, Henry Shillingford, Ph.G., N. Y., '88..	P. & S., N. Y., '91.....	Bridgeport.
Miller, George Root.....	P. & S., Balt., '86.....	Hartford.
Miller, James Raglan.....	Johns Hopkins, '11.....	Hartford.
Miller, William Radley.....	Albany, '98.....	Southington.
Minor, George Maynard.....	L. I. Hosp. Coll., '85.....	Waterford.
Mitchell, James Thomas.....	Univ. N. Y., '91.....	Middletown.
Molumphy, David James.....	Jeff., '06.....	Hartford.
Monagan, Charles Andrew, B.S., Trinity, '93..	Univ. Pa., '98.....	Waterbury.
Monahan, Joseph B. ....	Dartmouth Med. Coll., '94, New Haven.	
Moody, Mary Blair.....	Buffalo, '76.....	New Haven.
Moore, DeC. Y. ....	N. Y. Homeo. Med. Sc., '95, So. Manchester.	
Moore, Howard D. ....	Hahn., Phila., '93.....	Danbury.
Moore, Howard Doolittle.....	Bellevue, '97.....	Torrington.
Morgan, William Dennison, A.B., Trinity, '72..	P. & S., N. Y., '76.....	Hartford.
Moriarty, James Ligouri.....	Harvard, '96.....	Waterbury.
Morrell, Frederick Augustus.....	L. I. Hosp. Coll., '85.....	Putnam.
Morrisse, William Haviland.....	Johns Hopkins, '12.....	New Haven.
Morrissey, Michael Joseph.....	P. & S., Balt., Md., '97....	Hartford.
Morrissey, William Thomas, B.A., Holy Cross Coll. ....	Baltimore, '09.....	Unionville.
Morse, Arthur.....	Johns Hopkins, '06.....	New Haven.
Morse, Vernon H. Chipman.....	Harvard, '03.....	Avon.
Moser, Oran Alexander.....	Yale, '02.....	Rocky Hill.
Moulton, Edward Seymour, B.A., Oberlin, '91..	Yale, '94.....	New Haven.
Mountain, John Henry.....	Jefferson, '96.....	Middletown.
Mullins, Samuel Frederick.....	Bellevue, '06.....	Danbury.
Munger, Carl Eugene, Ph.B., Yale, '80.....	P. & S., N. Y., '83.....	Waterbury.
Murdock, Thos. P. ....	Balt. Med., '10.....	Meriden.
Murless, H. Walter.....	Louisville Med. Coll., '93....	Guilford.
Murphy, James.....	Univ. Pa., '95.....	Middletown.
Murphy, John Aloysius.....	N. Y. Univ., '97.....	New Haven.
Murphy, Michael D. ....	Bellevue, '84.....	Middletown.
Murphy, Walter Graham.....	Albany Med. Coll., '90.....	Hartford.
Nadler, Alfred Goldstein, B.A., Yale, '93.....	Yale, '96.....	New Haven.
Naylor, James Henry.....	Univ. Vt., '95.....	Hartford.
Nemotit, Julius.....	P. & S., N. Y., '05.....	Stamford.
Nettleton, Francis Irving, Ph.B., Yale, '94....	Yale, '97.....	Shelton.
Nettleton, Irving LaField.....	L. I. Hosp. Coll., '98.....	Bridgeport.
Newton, Cyrus Brownlee.....	Yale, '56.....	Stafford Springs.
Nichols, Ralph W., Yale, '08.....	Johns Hopkins, '12.....	Montowese.
Nickerson, Nebemiah.....	N. Y. Med. Coll., '57.....	Meriden.
Nolan, Daniel Andrew, Ph.G., Phil., '93.....	Med. Chir., Phila., '95....	Middletown.
Nolan, Jacob Matthew.....	P. & S., Balt., '94.....	Westport.
North, Joseph Howard.....	L. I. Hosp. Coll., '73.....	Goshen.
Notkins, Louis Adolph.....	Yale, '03.....	New Haven.
Noyes, Arthur Percy.....	Univ. of Penn., '06.....	Suffield.

- Noxon, George Henry.....Balt. Med. Coll., '93.....Darien.  
 Nugent, Huggard W. ....Hahn., Phila., '10.....New Haven.
- Ober, George Eugene.....Univ. Vt., '90.....Bridgeport.  
 O'Brien, Francis Joseph.....Fordham, '13.....  
 O'Brien, John F. ....Yale, '08.....Meriden.  
 O'Brien, Joseph F. ....Univ. of Vt., '13.....Hartford.  
 O'Brien, Thomas Augustine.....Yale, '02.....New Haven.  
 O'Connell, Thomas Smith.....P. & S., Balt., '92.....East Hartford.  
 O'Connor, Matthew Charles, A.B., St.  
   Francis X., N. Y., '69.....P. & S., N. Y., '73.....New Haven.  
 O'Connor, Patrick Thomas.....Bellevue, '92.....Waterbury.  
 O'Flaherty, Ellen Pembroke.....Cornell, '01.....Hartford.  
 O'Hara, Bernard Augustine.....Bellevue, '82.....Waterbury.  
 O'Hara, William James Aloysius.....P. & S., Balt., '93.....Bridgeport.  
 O'Loughlin, Thomas Francis.....Univ. N. Y., '96.....Rockville.  
 O'Neil, Owen.....Jeff., '04.....Willimantic.  
 O'Neil, William Henry.....Balt. Med. Coll., '11.....Ansonia.  
 Onderdonk, Harry Jay.....Univ. N. Y., '97.....East Hartford.  
 Osborn, George Wakeman, B.A., Yale, '84....P. & S., N. Y., '87.....Bridgeport.  
 Osborne, Oliver Thomas.....Yale, '84.....New Haven.  
 O'Shaughnessy, Edmund Joseph.....Bellevue, '99.....New Canaan.  
 Otis, Samuel Dickinson.....Univ. N. Y., '77.....Meriden.  
 Outerson, Andrew Mansergh.....Jeff., '06.....Hartford.  
 Outerson, Richard Ambrose.....Jeff., '02.....Windsor Locks.  
 Overlock, Seldom Burden, B.A., Colby, '86....Bellevue, '89.....Pomfret.  
 Owens, William Thomas.....Univ. Vt., '99.....Hartford.
- Paine, Robert Child.....Dartmouth, '00.....Thompson.  
 Park, Charles Edwin.....Yale, '81.....New Haven.  
 Parker, Edward Oliver, A.B., Harvard, '91....P. & S., N. Y., '96.....Greenwich.  
 Parker, Spotswood Hayes.....Univ. of Va., '04.....Hartford.  
 Parker, Theodore Raymond.....Univ. N. Y., '80.....Willimantic.  
 Parlato, Michael Antonio.....Yale, '08.....Derhy.  
 Parmelee, Edward Kihbe.....L. I. Hosp. Coll., '89.....Ansonia.  
 Partree, Homer Tomlinson.....Yale, '92.....Torrington.  
 Patterson, Daniel Cleveland.....P. & S., Balt., '06.....Bridgeport.  
 Peck, Frederick Johnson.....Univ. Mich., '92.....Ansonia.  
 Peck, Robert Ellsworth, Ph.B., Yale, '90....Yale, '93.....New Haven.  
 Peckham, Lucy Creemer.....Wom. Med. Coll., Pa., '85, New Haven.  
 Pendleton, Cyrus Henry.....Western Reserve, '60.....Hebron.  
 Perkins, Charles Harris.....P. & S., N. Y., '91.....Norwich.  
 Perry, Edward Franklin.....L. I. Hosp. Coll., '97.....Putnam.  
 Peters, H. LeBaron, B.A., Univ. N. B. ....McGill, '07.....Bridgeport.  
 Phelps, Charles Dickinson, B.A., Amherst,  
   '80; M.A., Amherst, '97.....P. & S., N. Y., '95.....West Haven.  
 Phelps, Stuart E. ....McGill, '99.....Farmington.  
 Philip, Rosavelle Gardner.....Wom. Med. Coll., N. Y. Inf., '75, Stamford.  
 Phillips, Alfred Noroton.....P. & S., N. Y., '83.....Stamford.  
 Phillips, Frank Lyman, Ph.B., Yale, '02....Yale, '06.....New Haven.  
 Pierce, Elhridge Worthington.....Univ. N. Y., '85.....Meriden.  
 Pierson, John Corhin.....Tufts, '03.....Hartford.  
 Pierson, Samuel.....P. & S., N. Y., '81.....Stamford.  
 Pike, Ernest Reginald.....Univ. Mich., '98.....East Woodstock.  
 Pinney, Almon William.....Hahn. Med. Coll., Phila., '00, Norfolk.

- Pinney, Royal Watson.....P. & S., N. Y., '88.....Derby.  
 Pitman, Edwin Parker, B.A., Dart., '86.....Dartmouth, '91.....New Haven.  
 Platt, William Logan.....P. & S., N. Y., '81.....Torrington.  
 Plumstead, Matthew Woodbury.....Jeff., '87.....East Haddam.  
 Plunkett, Thomas F. ....L. I. Coll. Hosp., '08.....Derby.  
 Pomeroy, Nelson Asa.....P. & S., N. Y., '96.....Waterbury.  
 Pons, Louis Jacques.....Univ. Vt., '85.....Milford.  
 Porter, Donald Wallace, A.B., Yale.....Harvard, '12.....New Haven.  
 Porter, George Loring, B.A., Brown, '59.....Jeff., '62.....Bridgeport.  
 Porter, Isaac Napoleon, B.A., Lincoln, '90....Yale, '93.....New Haven.  
 Porter, William, Jr. ....Chicago Med. Coll., '81.....Hartford.  
 Potter, Frank Edward.....P. & S., N. Y., '89.....Portland.  
 Potts, Joseph Henry.....Dartmouth, '05.....New Britain.  
 Powers, Frederick.....P. & S., N. Y., '70.....Westport.  
 Pratte, Louis Irving.....Que., '79.....Taftville.  
 Pratt, Arthur Milon.....Bellevue, '92.....Deep River.  
 Pratt, Edward Loomis.....Univ. N. Y., '84.....Winsted.  
 Pratt, Elias.....P. & S., N. Y., '87.....Torrington.  
 Pratt, Nathan Tolles, A.B., Trinity, '94;  
     M.A., '97.....Yale, '04.....Bridgeport.  
 Prince, Alexander Louis.....Yale, '10.....New Haven.  
 Provost, Alva G. ....Yale, '05.....New Haven.  
 Purdy, Alexander Marshall.....Univ. Mich., '84.....Mystic.  
 Purinton, Charles Oscar, Ph.B., Yale, '97....Yale, '00.....West Hartford.  
 Purney, John.....Balt. Med. Coll., '06.....New Britain.  
 Pyle, Francis Winthrop, A.B., Yale, '97.....P. & S., N. Y., '02.....Bridgeport.  
 Quinlan, Raymond V. ....Balt. Med. Coll., '10.....Meriden.  
 Quinn, John Francis.....Balt. Med. Coll., '06.....Bridgeport.  
 Quinn, Raymond J. ....P. & S., Balt., '13.....Waterbury.  
 Radom, Fannie.....Wom. Med. Coll., '12.....Hartford.  
 Rand, Richard Foster, Ph.B., Yale, '95.....Johns Hopkins, '00.....New Haven.  
 Randall, William Sherman, Ph.B., Yale, '83....P. & S., N. Y., '86.....Shelton.  
 Reardon, William F. ....Bellevue, '09.....Hartford.  
 Reeks, Thomas Eben.....Univ. Md., '01.....New Britain.  
 Reich, Upton Sharetts.....Univ. of Va., '09.....Bridgeport.  
 Reidy, David Dillon.....Med. Chi., Phila., '09.....Winsted.  
 Reidy, Maurice J. ....P. & S., N. Y., '10.....Winsted.  
 Reilly, Francis Henry.....Yale, '97.....New Haven.  
 Reilly, James Michael.....Yale, '78.....New Haven.  
 Reinert, Emil Gustav.....Balt. Med. Coll., '95.....Hartford.  
 Reynolds, Harry St. Clair.....Yale, '10.....New Haven.  
 Reynolds, Harry Stephen.....Alhany Med., '14.....Hartford.  
 Reynolds, William George, A.B., Yale, '95....Yale, '97.....Woodbury.  
 Rice, Richard W. ....Coll. Phys. & Surg., South Manchester.  
 Rice, Watson Emmons.....Univ. Mich., '72.....Stamford.  
 Richards, William Spencer.....Univ. N. Y., '89.....West Winsted.  
 Richardson, Dwight A. ....Yale, '81.....Derby.  
 Rinde, Hamilton, N. Dakota, '02.....Johns Hopkins, '08.....Middletown.  
 Ringe, Milo Pemher.....P. & S., Cleveland, '05.....Madison.  
 Ring, Henry Wilson, A.B., Bowdoin, '79;  
     M.A., Bowdoin, '82.....Me. Med. Coll., '87.....New Haven.  
 Riordan, Michael Davitt.....Univ. of Vt., '12.....Waterbury.  
 Rising, Harry Breed.....Yale, '95.....South Glastonbury.  
 Rohhins, Charles Henry.....Balt. Med. Coll., '95.....New Haven.

- Robbins, George Orrin.....Yale, '79.....Waterbury.  
 Robbins, James Watson.....Bellevue, '80.....Naugatuck.  
 Roberts, Albert Joseph.....Harvard, '02.....Bridgeport.  
 Robinson, Joseph.....P. & S., N. Y., '98....West Cornwall.  
 Robinson, Myron Potter.....Yale, '95.....Windsor Locks.  
 Robinson, Paul Skiff, Ph.B., Yale, '89.....Yale, '91.....New Haven.  
 Robinson, Rienzi.....L. I. Hosp. Coll., '69.....Danielson.  
 Roche, Thomas Joseph.....P. & S., Balt., '11.....Bridgeport.  
 Rockwell, Thomas Francis.....Univ. N. Y., '81.....Rockville.  
 Rodman, Charles Shepard.....P. & S., N. Y., '68.....Waterbury.  
 Rogers, Frederick.....Univ. N. Y., '63.....Willimantic.  
 Rogers, James Frederick.....Yale, '05.....New Haven.  
 Rogers, Platt H.....Yale, '12.....West Haven.  
 Rogers, Thomas Weaver.....P. & S., N. Y., '90.....New London.  
 Roller, Robert D., Jr., A.B., W. Va., '00.....Univ. Coll. Med., '05.....Bridgeport.  
 Ronayne, Frank Joseph.....Yale, '04.....Hartford.  
 Rooney, James Francis.....Balt. Med. Coll., '03.....Hartford.  
 Root, Edward King.....Univ. N. Y., '79.....Hartford.  
 Root, Joseph Edward, B.S., Boston Univ., '76..P. & S., N. Y., '83.....Hartford.  
 Rose, John Henry.....Univ. N. Y., '92.....Hartford.  
 Ross, Donald Laurence.....McGill, '87.....Mansfield Depot.  
 Rowe, Michael Joseph.....P. & S., Balt., '96.....Bridgeport.  
 Rowley, Alfred Merriman.....Univ. Vt., '97.....Hartford.  
 Rowley, John Carter.....Harvard, '06.....Hartford.  
 Rowley, Robert Lee.....Yale, '03.....Hartford.  
 Ruland, Frederick Davis.....P. & S., N. Y., '89.....Westport.  
 Russ, Henry Camp, B.A., Yale, '02.....Johns Hopkins, '06.....Hartford.  
 Russell, Donald G. ....Yale, '14.....Wallingford.  
 Russell, Edmund.....Univ. of Penn., '04.....Waterbury.  
 Russell, Evans Dounton.....Jeff., '11.....Roxbury.  
 Russell, George Washington.....Bellevue, '96.....Waterbury.  
 Russell, Thomas H., Jr., Ph.B., Yale, '06.....Yale, '10.....New Haven.  
 Russell, William Spencer.....Yale, '80.....Wallingford.  
 Ryan, Joseph Patrick.....P. & S., N. Y., '03.....Hartford.  
 Ryan, Patrick Joseph.....Niagara, '98.....Hartford.  
 Ryan, Timothy Mayher, A.B., Loyola Coll....Balt. Med. Coll., '02.....Torrington.  
 Ryder, Charles Ambler.....Yale, '98.....Brookfield Center.  
 Ryder, Raymond H. ....P. & S., Balt., '13.....Waterbury.
- Sagarino, John F. ....P. & S., N. Y., '13.....Hartford.  
 Sanford, Charles Edwin.....Yale, '06.....New Haven.  
 Sanford, Leonard Cutler, B.A., Yale, '90.....Yale, '93.....New Haven.  
 Sanford, Ward Harding.....Balt. Med. Coll., '95.....New Haven.  
 Sansone, Nicola Maria.....Denver Med. Coll., '02....Bridgeport.  
 Scanlon, Thomas F. ....Yale, '07.....Bridgeport.  
 Scarbrough, Marvin McRae, B.A., Univ. of  
   Oregon, '02; M.A., Yale, '05.....Yale, '07.....New Haven.  
 Schavoir, Frederick.....P. & S., Balt., '87.....Stamford.  
 Scholl, Robert F. ....Yale, '12.....New Haven.  
 Schuele, George J. ....Yale, '08.....Bridgeport.  
 Schulz, Herman Samuel.....Hahn., Phila., '01.....Bridgeport.  
 Scofield, Everett J. S. ....Univ. of N. C., '08.....Danbury.  
 Scrimgeour, Arthur.....L. I. Coll. Hosp., '09.....Bridgeport.  
 Sears, Cushman Allen.....Univ. N. Y., '62.....Portland.  
 Segnalla, Ernest.....Yale, '12.....New Haven.

Segur, Gideon Cross.....	P. & S., N. Y., '82.....	Hartford.
Shahan, Dennis Joseph.....	Univ. Vt., '85.....	Norwich.
Shannon, Thomas J. ....	Balt. Med., '99.....	Falls Village.
Sharpe, Elmer Thomas.....	Univ. N. Y., '05.....	Derby.
Sharpe, Harry Rabe.....	Univ. Vt., '00.....	Manchester.
Shea, John F. ....	P. & S., Balt., '11.....	Bridgeport.
Sheahan, Michael J. ....	Yale, '96.....	Derby.
Sheahan, William L., Jr. ....	P. & S., Balt., '12.....	New Haven.
Shelton, Gould Abijah, M.A., Yale, '91.....	Yale, '69.....	Shelton.
Sherer, Henry Clifford.....	Univ. N. Y., '92.....	South Norwalk.
Sherman, Florence A. ....	Wom. Med. Coll., '91.....	Bridgeport.
Sherrill, George.....	P. & S., '91.....	Stamford.
Shirk, Samuel Martin.....	Hahn., Phila., '97.....	Stamford.
Simmons, Willard Nelson.....	Univ. Vt., '89.....	Tolland.
Simonds, Clarence Eugene.....	Univ. N. Y., '97.....	Willimantic.
Simonson, Louis, Mass. Coll. ....	Tufts, '08.....	Hartford.
Simonton, Frank F. ....	Me. Med. Sc., '03.....	Thompsonville.
Simpson, Frederick Thomas, B.A., Yale, '79.....	Me. Med. Coll., '84.....	Hartford.
Skiff, Francis Sands.....	Univ. N. Y., '88.....	Falls Village.
Skiff, Stuart E. ....	Hahn., Phila., '03.....	New Haven.
Skiff, Walter C. ....	N. Y. Hom. Coll., '83.....	New Haven.
Skinner, Clarence Edward, LL.D., Rutherford, N. C., '00.....	Yale, '91.....	New Haven.
Slattery, Morris Dove.....	Yale, '93.....	New Haven.
Slemons, J. Morris.....	Johns Hopkins, '01.....	New Haven.
Sloan, Thomas George.....	P. & S., N. Y., '99.....	South Manchester.
Smail, Martin L. ....	Univ. Vt., '93.....	Mystic.
Smirnow, Max Ruskin.....	Yale, '06.....	New Haven.
Smith, Arthur Charles.....	P. & S., Balt., '10.....	Danbury.
Smith, Charles.....	L. I. Hosp. Coll., '90.....	Riverside.
Smith, Charles F. ....	N. Y. Homeo. Coll., '84.....	Wallingford.
Smith, David Parker, A.B., Yale, '10.....	Yale, '12.....	Meriden.
Smith, Dorland, A.B., Yale, '96.....	Yale, '99.....	Bridgeport.
Smith, Earl Terry, M.A., Trinity, '03 Hon. ....	Yale, '97.....	Hartford.
Smith, Edwards Montrose.....	P. & S., N. Y., '82.....	Bridgeport.
Smith, Edward Weir, A.B., Yale, '78.....	McGill, Mont., '82.....	Meriden.
Smith, Egbert Livingston.....	Yale, '96.....	Waterbury.
Smith, Ernest Herman, A.B., Amherst, '85.....	P. & S., N. Y., '89.....	Redding.
Smith, Frederic DeWitt.....	Hahn., '10.....	Guilford.
Smith, Frank Lewis.....	Univ. N. Y., '75.....	Stafford Springs.
Smith, Frank Llewellyn.....	Alhany, '83.....	Bridgeport.
Smith, Fred M. ....	Univ. Vt., '11.....	Willimantic.
Smith, Frederick Sumner, B.A., Yale, '79.....	Yale, '82.....	Chester.
Smith, George Arthur, A.B., Yale, '03.....	Johns Hopkins, '07.....	Stepney.
Smith, Henry Huhert.....	Jefferson, '77.....	New Haven.
Smith, Marvin.....	Univ. N. Y., '83.....	New Haven.
Smith, Newton Phineas.....	P. & S., N. Y., '82.....	Norwich.
Smykowski, Bronislaw Louis.....	Balt. Med., '11.....	Bridgeport.
Smyth, Herbert Edmund.....	McGill Univ., '84.....	Bridgeport.
Sperry, Frederick Noyes.....	Yale, '94.....	New Haven.
Spicer, Edmund.....	Yale, '05.....	Waterbury.
Spier, Seymour Leopold.....	Yale, '04.....	New Haven.
Sprague, Charles Harry.....	P. & S., N. Y., '04.....	Bridgeport.
Standish, Frank Billings.....	Yale, '03.....	New Haven.
Standish, James Herbert.....	Univ. N. Y., '95.....	Hartford.

- Stanley, Charles Everett.....Univ. Pa., '76.....Middletown.  
 Stanton, George Dallas.....Bellevue, '65.....Stonington.  
 Stanton, John Gilman, B.A., Amherst, '70....Wurtzburg, '73.....New London.  
 Starr, Robert Sythoss, B.A., Trinity, '97;  
     M.A., '00.....P. & S., N. Y., '01.....Hartford.  
 Stauh, George Edwards.....L. I. Hosp. Coll., '93....New Milford.  
 Stauh, John Howard.....L. I. Hosp. Coll., '99.....Stamford.  
 Steadman, Willard George.....Bellevue, '74.....Southington.  
 Steele, Henry Merriman, Ph.B., Yale, '94.....Johns Hopkins, '02.....New Haven.  
 Steinberger, Maurice, B.A., Coll. Colvensie  
     '83, Royal Hun. Univ. Buda Pesth, '89, N. Y. Med. Coll., '09.....Bridgeport.  
 Steiner, Walter Ralph, A.B., Yale, '92;  
     M.A., Yale, '95.....Johns Hopkins, '98.....Hartford.  
 Stephen, Harry Leslie.....Univ. of Vt., '13.....Shelton.  
 Stern, Charles Seymour, A.B., C. C. N. Y....Bellevue, '91.....Hartford.  
 Stetson, James Ebenezer.....Yale, '81.....New Haven.  
 Stetson, Paul R. ....Yale, '02.....New Haven.  
 Stevens, Caroline North.....Tufts, '98.....Wallingford.  
 Stevens, Frank William.....Yale, '00.....Bridgeport.  
 Stewart, Harry Eaton.....Yale, '10.....New Haven.  
 Stockwell, William Myron.....Univ. of Penn., '04.....Shelton.  
 Stoll, Henry Farnum.....P. & S., N. Y., '02.....Hartford.  
 Storrs, Eckley Reynor.....Jeff., '90.....Hartford.  
 Stratton, Edward Augustus.....Univ. N. Y., '83.....Danbury.  
 Stretch, James.....Univ. Coll., Richmond, Va., '02, Stafford Springs.  
 Strobel, Joseph E. ....Temple, '09.....Hartford.  
 Strosser, Herman.....Univ. Berlin, '84.....New Britain.  
 Sullivan, Daniel.....Univ. N. Y., '97.....New London.  
 Sullivan, Daniel Francis, A.B., Niagara  
     Univ., '89.....Niagara Univ., '91.....Hartford.  
 Sullivan, Jeremiah Bartlett, Yale, '03.....Yale, '06.....New Haven.  
 Sullivan, John Francis, B.A., Yale, '90.....P. & S., N. Y., '94.....New Haven.  
 Sullivan, Michael Joseph.....Cornell, '00.....Meriden.  
 Sunderland, Paul Ulysses.....N. Y. Hom. Med., '94.....Danbury.  
 Swain, Henry Lawrence.....Yale, '84.....New Haven.  
 Swan, Horace Cheney.....Tufts, '03.....Hartford.  
 Sweet, Grover C. ....P. & S., Balt., '12.....New Haven.  
 Sweet, John H. T. ....Tufts, '12.....Hartford.  
 Swenson, Andrew Clay.....Yale, '02.....Waterbury.  
 Swett, Paul Plummer.....Univ. N. Y., '04.....Hartford.  
  
 Taft, Charles Ezra.....Harvard, '86.....Hartford.  
 Tanner, Alfred Herbert.....Bellevue, '74.....Wauregan.  
 Taylor, John Clifton.....Univ. Mich., '91.....New London.  
 Taylor, Maude Winifred.....Tufts, '05.....Hartford.  
 Teele, Julia Ernestine, A.B., Tabor, '85.....Wom. Med. Coll., Pa., '88, New Haven.  
 Tenney, Arthur John, Ph.B., Yale, '77.....Yale, '83.....Branford.  
 Thibault, Louis Joseph.....Yale, '00.....Waterbury.  
 Thielke, George Emanuel.....Yale, '10.....Danbury.  
 Thompson, Emma Jane.....Wom. Med. Coll., N. Y., Inf., '96, Hartford.  
 Thompson, George.....Me. Med. Coll., '89.....Taftville.  
 Thompson, Whitefield Nelson, A.B., Bates, '88. Jefferson, '89.....Hartford.  
 Tileston, Wilder, Harvard, '95.....Harvard, '99.....New Haven.  
 Tingley, Witter Kinney.....Bellevue, '86.....Norwich.  
 Tinker, William Richard.....Univ. N. Y., '80.....South Manchester.

Tolles, Burton Isaac, A.B., Yale, '01.....	Yale, '04.....	Ansonia.
Topping, Jacob Reed.....	Univ. N. Y., '82.....	Bridgeport.
Townsend, Charles Rodman.....	Alhany, '95.....	Bridgeport.
Townshend, Raynham, Ph.B., Yale, '00.....	P. & S., N. Y., '05.....	New Haven.
Tracey, Dwight Wallace, Ph.B., Yale, '04.....	Johns Hopkins, '08.....	Hartford.
Tracey, William Joseph.....	Univ. N. Y., '89.....	Norwalk.
Tracy, Andrew William.....	McGill, '73.....	Meriden.
Tracy, Robert Graham.....	Yale, '00.....	New Haven.
Travis, Catherine Hutchison.....	Johns Hopkins, '03.....	New Britain.
Treat, William Howard.....	Yale, '06.....	Derhy.
Trecartin, David Munson.....	Dartmouth, '94.....	Bridgeport.
Truex, Edward Hamilton.....	Univ. Louisville, '08.....	East Hartford.
Tuch, Morris.....	Bellevue, '06.....	Hartford.
Tukey, Frank Martin, B.A., Bowdoin, '91.....	Harvard, '94.....	Bridgeport.
Turhert, Edward Joseph.....	Balt. Med. Coll., '04.....	Hartford.
Turkington, Charles Henry, Ph.B., Yale, '03.....	Johns Hopkins, '07.....	N. Y. City.
Turner, Arthur Robert, A.B., Amherst, '84.....	Univ. Paris, '94.....	Norwalk.
Turrill, Henry Smith, Ph.B., Yale, '06.....	Yale, '10.....	Canaan.
Tuttle, Charles Alling, Ph.B., Yale, '88.....	Yale, '90.....	New Haven.
Tuttle, Frank James.....	Univ. Vt., '98.....	Naugatuck.
Vail, George Francis, B.S., Villanova, '98.....	Univ. Pa., '02.....	Hartford.
VanStrander, William Harold.....	Univ. Vt., '00.....	Hartford.
Van Vleet, Peter P. ....	Bellevue, '69.....	Stamford.
Variell, Arthur.....	Bowdoin, '94.....	Waterbury.
Varno, Henry George.....	P. & S., Balt., '82.....	Thompsonville.
Vastola, Anthony P. ....	Fordham, '12.....	Waterbury.
Verdi, William Francis.....	Yale, '94.....	New Haven.
Wadhams, Sanford Hosea.....	Yale, '96.....	Torrington.
Waite, Frank Louis.....	Bellevue, '88.....	Hartford.
Waite, Robert L., Ph.B., '05.....	Johns Hopkins, '09.....	Hartford.
Wales, Francis Joseph.....	N. Y. Univ., '97.....	Stepney Depot.
Walsh, Frederick William.....	P. & S., Balt., '85.....	Rockville.
Walsh, Joseph William.....	P. & S., Balt., '07.....	Danbury.
Walsh, Thomas Patrick.....	Univ. Vt., '02.....	Middletown.
Ward, James Ward.....	P. & S., Balt., '95.....	Hartford.
Warner, Charles Norton.....	Jeff., '96.....	Litchfield.
Warner, George Howell.....	Yale, '97.....	Bridgeport.
Wason, David Boughton.....	P. & S., N. Y., '00.....	Bridgeport.
Waterhouse, Henry Edwin.....	P. & S., N. Y., '02.....	Bridgeport.
Waterman, Paul.....	Cornell, '02.....	Hartford.
Waters, John Bradford.....	Univ. Vt., '90.....	Hartford.
Watson, William Clark.....	L. I. Hosp. Coll., '97.....	Bridgeport.
Watson, William Seymour.....	L. I. Hosp. Coll., '87.....	Danbury.
Weadon, William Lee.....	Va. Med. Coll., '05.....	Bridgeport.
Weidner, Calvin.....	Univ. Ind., '93.....	Hartford.
Weir, Janet Marshall.....	Queen's Univ., Kingston, Ont., '91.....	Hartford.
Welch, George Kellogg.....	P. & S., N. Y., '78.....	Hartford.
Welch, Harry Little, A.B., Yale, '94.....	Yale, '97.....	New Haven.
Welch, Thomas Francis.....	Georgetown, '04.....	Hartford.
Welch, William Collins.....	Yale, '77.....	New Haven.
Welden, Edwin B. ....	P. & S., Balt., '13.....	Bridgeport.
Weldon, Thomas Henry.....	Univ. N. Y., '83.....	South Manchester.
Wellington, William Winthrop.....	Univ. Vt., '89.....	Terryville.

- Wells, Donald B. .... Johns Hopkins, '12.....Hartford.  
 Wells, Ernest Alden, A.B., Yale, '97.....Johns Hopkins, '01.....Hartford.  
 Wersebe, Frederick William.....Univ. N. Y., '98.....Washington.  
 West, Redfield Benjamin.....Univ. N. Y., '79.....Guilford.  
 Whalen, Edward J. .... Yale, '08.....Hartford.  
 Wheatley, Louis Frederick.....Tufts, '03.....Meriden.  
 Wheeler, Frank Henry, B.A., Yale, '80.....Yale, '82.....New Haven.  
 Wheelock, Albert Andrews.....Univ. Vt., '97.....New Canaan.  
 Whipple, Benedict Nolasco.....Yale, '07.....Bristol.  
 White, Benjamin Walker.....L. I. Hosp. Coll., '86....Bridgeport.  
 White, Robert Creighton.....Univ. Vt., '89.....Willimantic.  
 Whiting, Leonard C. .... Md. Med. Coll., '12....New Haven.  
 Whittemore, Edward Reed, A.B., Yale, '98...P. & S., N. Y., '02....New Haven.  
 Whittemore, Frank Hamilton.....Bellevue, '74.....New Haven.  
 Wiedman, Otto George.....Univ. Pa., '05.....Hartford.  
 Wight, George DeWitt.....Bellevue, '87.....Bethel.  
 Williams, Charles Mallory.....P. & S., N. Y., '98.....Stonington.  
 Wilmot, Louis Howard.....Univ. N. Y., '91.....Ansonia.  
 Wilson, Frank E. .... Univ. Vt., '11.....Montville.  
 Wilson, Frederick Morse, A.B., Colby, '71...Harvard, '75.....Bridgeport.  
 Wilson, James Cornelius.....Univ. Vt., '04.....Hartford.  
 Wilson, Leslie A. .... Yale, '10.....Meriden.  
 Wilson, McLeod C. .... Cornell Med. Sc., '04..West Hartford.  
 Wilson, William Patrick.....P. & S., Balt., '90.....Wallingford.  
 Winne, William Nelson.....N. Y. Univ., '07.....New Haven.  
 Winship, Ernest Oliver.....Univ. Vt., '00.....New London.  
 Witter, Orin Russell.....P. & S., N. Y., '01.....Hartford.  
 Wolff, Arthur Jacob.....Tex. Med. Coll., '76, Bellevue, '83, Hartford.  
 Woodford, Chester N. .... Univ. Louisville, '08....Naugatuck.  
 Woodward, Harold B., B.A. Wesleyan.....Johns Hopkins, '02.....Terryville.  
 Wooster, Charles Morris.....Univ. N. Y., '79.....Tariffville.  
 Wormley, Harry R. .... Rush Med., '06...Hartford.  
 Worthen, Thomas Washburn.....Dartmouth, '11.....Hartford.  
 Wright, Arthur B. .... P. & S., N. Y., '95.....Hartford.  
 Wright, Frank Walden.....Bellevue, '80.....New Haven.  
 Wright, George Herman.....P. & S., N. Y., '94.....New Milford.  
 Wright, John Winthrop, A.B., Amherst, '77...Univ. N. Y., '80.....Bridgeport.  
 Wright, Theodore Goodelle.....Univ. N. Y., '65.....New Britain.  
 Wurtenberg, William Charles, Ph.B., Yale, '89, Yale, '03.....New Haven.
- Yergason, Robert M. .... P. & S., Balt., '09.....Hartford.  
 Young, Charles Bellamy.....P. & S., N. Y., '94.....Middletown.  
 Young, James F. .... P. & S., N. Y., '13.....New London.  
 Young, Thomas H. .... Yale, '95.....New Haven.
- Zink, Charles Edwin, A.B., Balt. Univ. ....Balt. Univ., '00.....Durham.  
 Zwich, Frank.....Univ. Vt., '13.....New Britain.





















